a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

JULY, 1958

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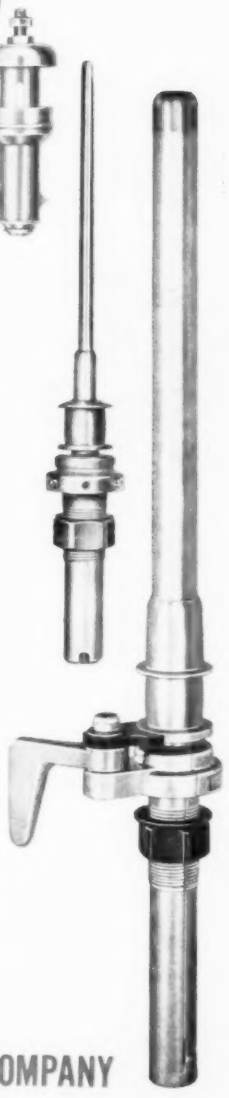

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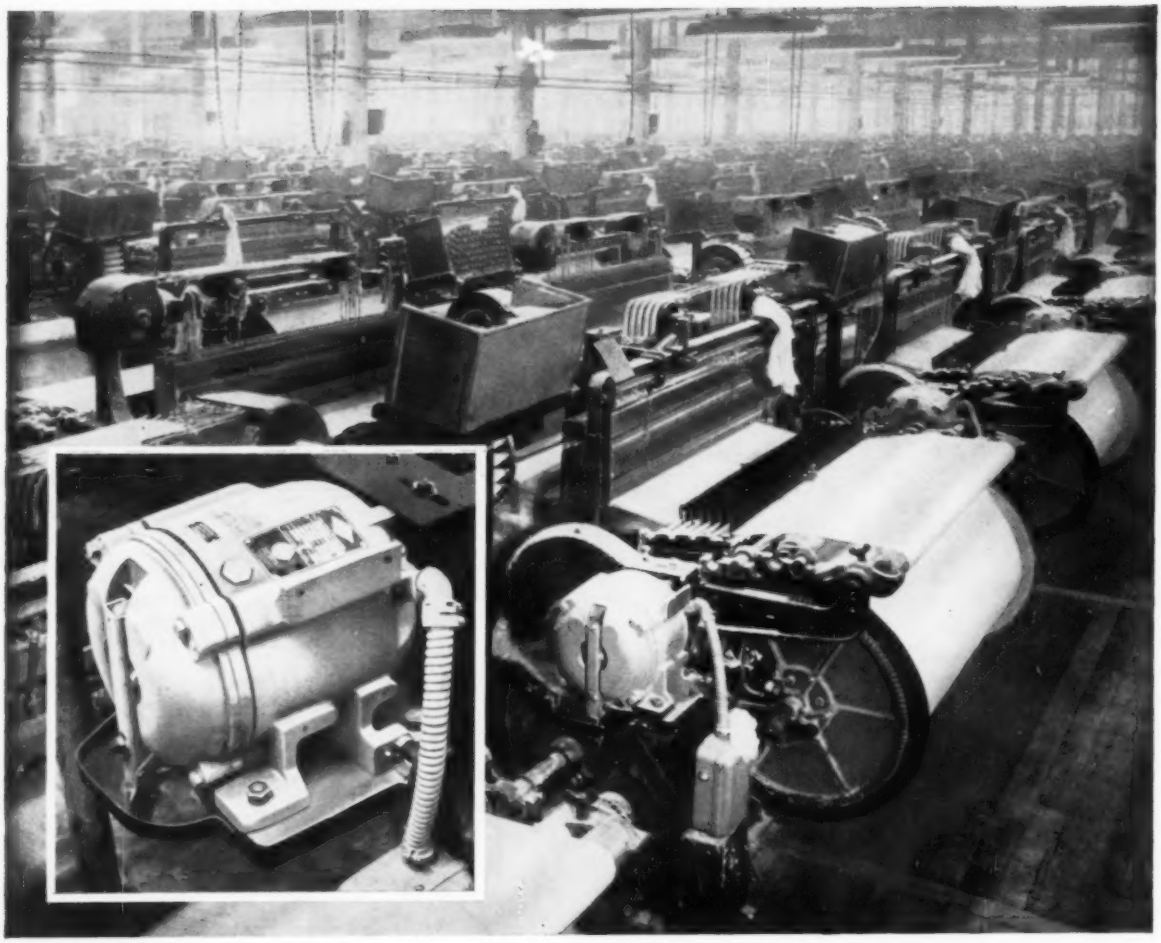
NEXT MONTH: TI reports on the man-made fibers



AT CONE MILLS

• • • • • • • •

DIEHL transmitters improve product quality

Three hundred Draper looms powered by the latest type DIEHL Power Transmitters were recently installed as part of an important new modernization program at Cone Mills Corporation's Minneola Plant, Gibsonville, N. C., with most satisfactory results in the improvement of loom performance and product quality.

DIEHL Power Transmitters were developed especially for Draper looms, and feature a fast, positive clutch-brake mechanism combined with an inverted type motor which provides high inertia without need for a separate flywheel. This design produces a constant steady pull for more efficient weaving and better quality greige goods, in the opinion of a plant official. "Increased efficiency of looms will be joined by lower operating costs because of the combination of Draper X2 looms and DIEHL Transmitters," he said. The looms now run at 186 picks per minute.

Cone Mills plant officials are favorably impressed with the positive action of the clutch-brake mechanism, the pinion driving shaft construction which eliminates the thrust bearing on the loom, the speed and ease of removal and replacement of the transmitter for inspection and servicing, the totally enclosed housing design which protects against weave room lint and fly, and the negligible maintenance and down-time costs.

DIEHL Power Transmitters can increase production and efficiency—at lower operating costs and less down-time—in your mill. Specify them for your looms.

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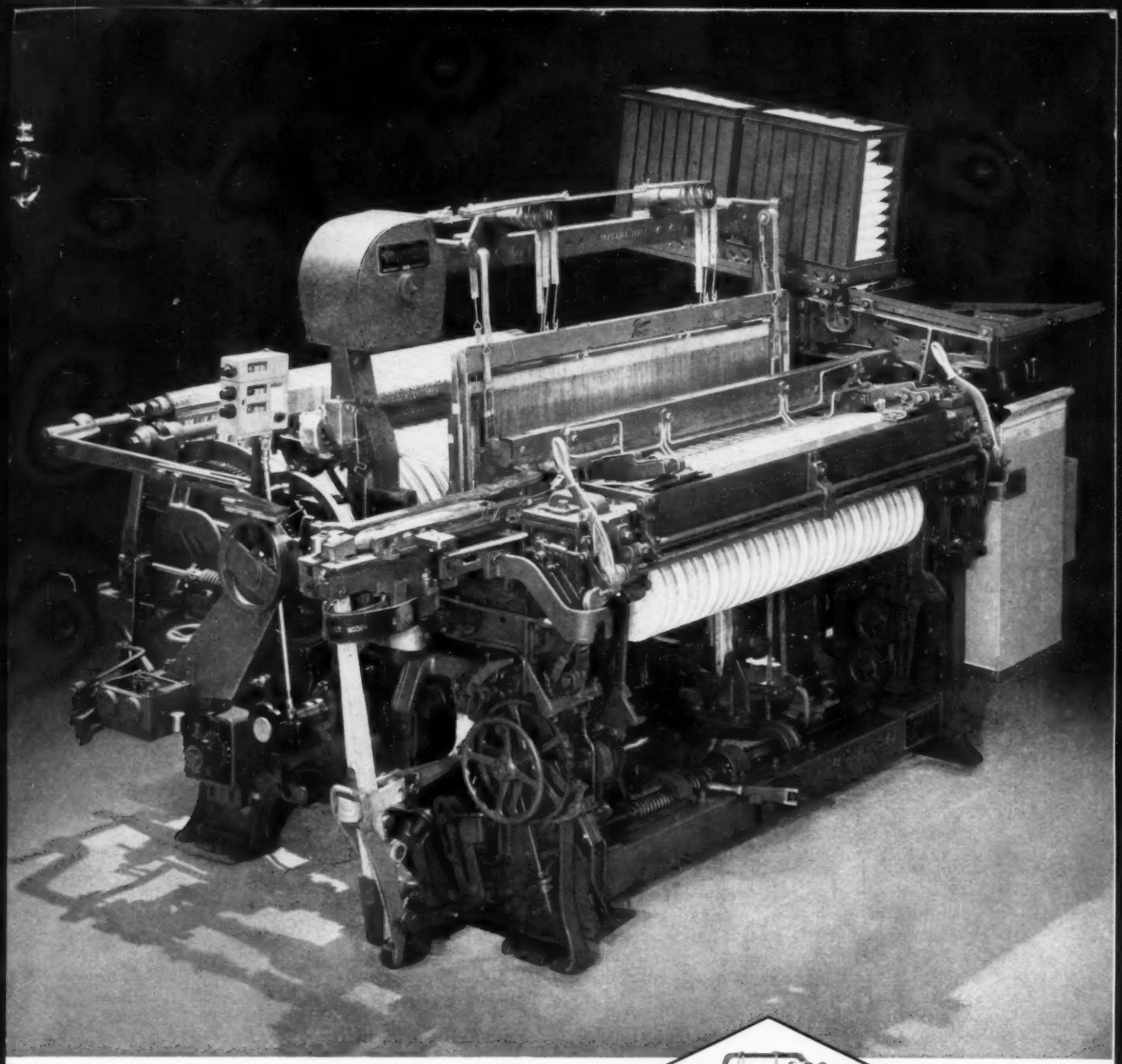

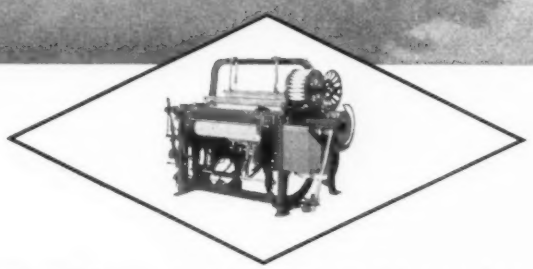

Obsolescence is natural . . . in textile machinery because of continual research and development • Modern Draper looms with countless new improvements save time and money in weave sheds throughout the world • New Draper looms keep your mill in a competitive position in todays changing markets.

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**From a report to a Becco Technical Representative*

Becco Silicate-Free methods for continuous Hydrogen Peroxide bleaching have again converted a mill manager's headache to a head start on his competitors. When complex silicates of calcium and magnesium formed scale on equipment and left hard-to-remove residues in the cloth, Becco's recommendation for Silicate-Free Hydrogen Peroxide bleaching solutions resulted in elimination of dye house troubles.

The patented Becco Silicate-Free processes**, readily available to the textile industry, not only eliminate dyeing problems, but also—when silicate scale is the offender—minimize seconds and rejects and reduce down-time for equipment cleaning.

This doesn't mean that Silicate-Free bleaching is the answer to every textile problem. But, if you're having troubles due to silicate scale and insoluble residues, Becco Silicate-Free procedures can help you. These methods, created in the laboratory and proved in the mill, are another example of Becco's practical experience in service to the industry.

Fact is, Becco can help you with most of your textile problems, as we've been doing for years, and there's never any obligation. Just drop us a line, at the address below. Also, you might like to have a free copy of Becco's Bulletin No. 71, "Continuous Bleaching of Cottons with Silicate-Free Peroxide Solutions"; ask for it at the same time.

***—U.S. Patents 2,740,689 and 2,820,690*

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NBP BPA

Textile Industries

Formerly "COTTON"

Vol. 122, No. 7
JULY, 1958

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TIME SAVER for busy readers

Here is a summary of some of the major articles in this issue

Use it to organize your reading time most effectively

Machinery layouts help supervisors 51

■ One southern mill has prepared forms showing the layout of the machinery in its spinning and weaving departments. Copies of the layout are prepared from a duplicating machine master plate; and the layouts are then used for assigning jobs and for discussing machinery or job modifications.

New type travelers run 19½ days longer 53

■ Travelers in the spinning room at Erlanger Mills were formerly changed as often as twice in 24 hours; now they last a minimum of four weeks. Labor costs in changing travelers were reduced 50%, among other advantages.

No more waiting for warps! 54

■ Three new slashers at Dundee Mills are sizing more warps per day than seven did before. Speeds of up to 120 yards per minute are made possible by high drying capacity, automatic controls, and magazine creels.

Print works thrives on diversity 56

■ Bruck Mills, Ltd., Cowansville, Que., is a highly diversified printer of a wide variety of fabrics of natural and synthetic fibers and blends. This staff prepared article describes its operations.

Simple quality control 58

■ The director of quality control for a southern cotton mill outlines the various tests he feels are important in a simple quality control program, from raw cotton to grey goods.

Do's and don'ts in arbitration 61

■ Management is well advised to be fully aware of the pitfalls which arbitration clauses in union contracts may contain. The author discusses arbitration from contract negotiation to arbitration hearing.

Weaving in 3-D 64

■ Fabrics woven in hemispherical, conical, and other shapes are required by the reinforced plastics industry, for radomes, rocket nose cones, etc. Here are the details on how to weave them.

Improve efficiency in cylinder drying 72

■ The author, a consulting engineer, discusses the basic principles of contact drying, effect of vapor and air films on rate of drying, surface temperature measurement, and thermal dryer efficiency.

Spot ends-down Quickly 75

■ The Twin Beam illuminating device directs a light beam down the length of a spinning frame, outlining the threads between the delivery roll and thread guide. Ends-down are therefore much more easily detected.

Here's that loopless toe 122

■ The Getaz or loopless toe for ladies' seamless hosiery, available on a license agreement, eliminates the cost of looping—the toe is closed by seaming a gusset on the bottom of the foot.

How to knit saaba 126

■ Saba is reprocessed Superloft or Fluflon false-twist stretch yarn. Critical points in processing are balanced torque, uniform tensions, stitch size, and seperation of lots from different sources.

COMING NEXT MONTH
Special man-made fibers section

■ TEXTILE INDUSTRIES for August will present a special section on the man-made fibers. The subjects to be covered range over most of the synthetics field: textured yarns, mill processing, dyeing, printing, finishing, rayon staple manufacture, tire cord, polyethylene, and new fibers. A new fiber properties chart is included.

TEXTILE INDUSTRIES is indexed in the "Applied Science & Technology Index"

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Photo courtesy Beacon Piece Dyeing & Finishing Co., Inc., Beacon, N. Y.

A "Liquid Lock" for textile colors

A significant advance in textile printing occurred with the advent of resin-bonded pigments. These new colors permitted striking patterns in brilliant shades with excellent fastness to sunlight, atmospheric fumes, washing and dry cleaning. But they still left something to be desired on crocking.

Finally a leading textile color manufacturer hit upon a simple solution – one based on CHEMIGUM LATEX. Combined with other materials and easily mixed into the base pigment colors at the printer's, CHEMIGUM LATEX helps form a protective coating against abnormal abrasion. The end result is greatly improved fastness to crocking plus added resistance to washing.

In addition to putting a liquid lock on pigment colors, CHEMIGUM LATEX has many other uses in the processing of textiles. Its high-binding strength, flexibility, light color and permanence plus ease of handling, compounding and applying are finding wide application in binders, coatings, finishes and adhesives of all types.

For full information, including the latest *Tech Book Bulletins*, on how CHEMIGUM LATEX can improve your product, just write to:

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NACCONOL SL is a homogenous liquid that stays clear . . . never separates . . . even at temperatures below 32°F.!

In the drum or through plant pipelines, it's clean and easy to handle. No dissolving needed . . . you just add water to make the desired concentration.

Yet the extra quality of NACCONOL SL costs you no more. In fact, it gives you better money value . . . more cleaning power per dollar . . . than most dry products on an active ingredient basis.

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Allied Chemical

AUTOMATIC CLEANING where overhead track brings full air sweep of loom cleaner to every loom on the floor, without disrupting loom operation, keeping looms free of accumulated waste.

Keep Looms Continuously Clean . . . with No Downtime!

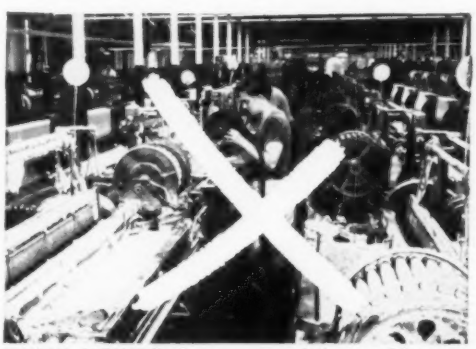
AMCO HELICLONE® LOOM CLEANER Pat. Pend.

In mills where Amco Heliclone Loom Cleaners have been installed, new high-quality production standards are being established.

The swiftly whirling outlet nozzles, driven by powerful air streams, direct high velocity jets of air in overlapping, circular paths resulting in a rapid series of sharp puffs over loom and warp surfaces. At the same time, supplementary air outlets clean overhead track and ceiling. Automatic cleaning with Heliclones largely eliminates end runs and floats, waste bunches, end breakage, overshots, broken picks, and oil spots caused by loose accumulated waste.

Amco Heliclone Loom Cleaners may be used for the automatic cleaning of practically *all* makes and types of looms. A unit similar to the Heliclone is also available for winder cleaning. Write for further facts.

- Keeps looms and ceiling free of accumulated waste
- Cuts loom cleaning and costly downtime
- Improves production and quality of fabric
- Reduces fire hazard
- Improves weave room appearance
- Can be used with beam handling equipment



MANUAL CLEANING of waste accumulation, used by most mills, is very costly in terms of labor and downtime. It is a constant source of accidents and cloth imperfections.

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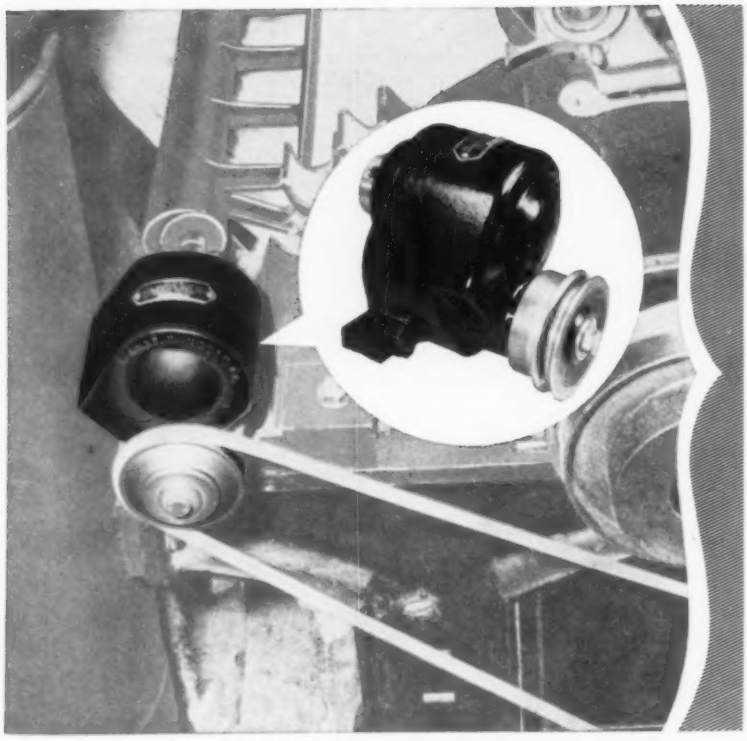


OUTSTANDING SUPERIORITY OF SOUTHERN STATES COMB BOXES PROVED IN NATION'S MILLS

More than 45,000 Southern States Comb Boxes have been placed in service during the past 10 years—equal to 50% of all the nation's cotton cards. Many mills have changed over 100%.

This overwhelming acceptance proves conclusively that mills can easily justify the small investment. Cardroom overseers quickly recognize the savings that result from their use: no oiling, cleaning or maintenance for the life of the unit; steady, even strokes to drive the comb with perfection; elimination of hot-running, leaky, rattling old-style boxes and their headaches.

Southern States Comb Boxes are furnished complete with an adjuster base for mounting on any make of cotton card. Bases are double tapped to permit rapid mounting on either right or left hand cards. Installation is quick and easy.

Let us show you with facts and figures how it has paid hundreds of mills to install Southern States ball-bearing, sealed-for-life, Comb Boxes; prove how much they will save you in one year. Write direct for a representative to call at your convenience.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Shorts and Remnants

► Since a good many of S&R's readers (if any) went ahead and celebrated Yankee Decoration Day on May 30, maybe we had just as well go along with them and celebrate the Fourth of July, too.

They even have history books about some Declaration of Independence on July 4, 1776; but the truth of the matter is that said Declaration of Independence, introduced first as a resolution before the Continental Congress by Richard Henry Lee (probably an ancestor of Robert E.) on June 7, 1776, was not actually signed by Congress until Aug. 2, 1776. Well, now that's too close to the birthday of ole S&R (Aug. 1—no presents, please) for two holidays in a row.

Actually the Yankees picked out July 4 because that is the day in 1863 when Vicksburg, starved out, surrendered to General U. S. Grant, giving the Union forces command of the Mississippi, cutting off Texas, Arkansas, and Louisiana from the rest of the Confederacy and sounding the death knell for the "Lost Cause."

So there you have July 4. Next month we will have more on the Declaration—that being more fitting in August.

► Now comes our good TI ad mgr., **Walter Mitchell, Jr.,** to tell us about a display, cyclorama, or museum at Chattanooga telling of another turning point of the war—the real one, he says—the battle of Chattanooga.

Seems they have recreated the storming of Missionary Ridge by the Yankee contingent on Nov. 25, 1863. Seems as though the same old U. S. Grant, now over in Tenn., sent a swarm of Wis. and Minn. troops, badly licked two months before at Chickamauga, on a diverting movement against Confederate General Bragg's first line on impregnable Missionary Ridge. The soldiers didn't know it was impregnable and swept

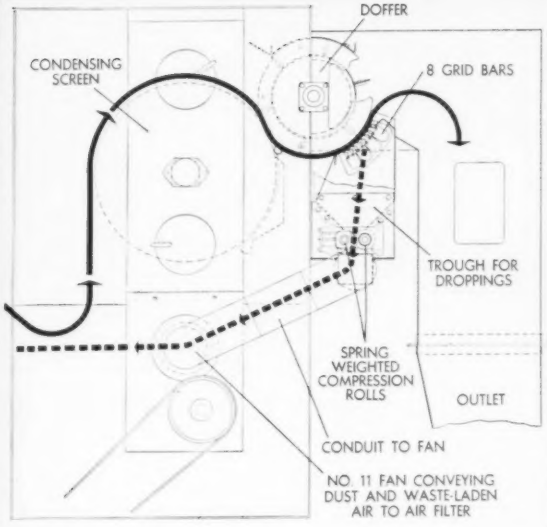
(Continued on page 12)

Poor cotton giving you trouble?
Dust and fly a problem?

NEW SACO-LOWELL *Automatic* CLEANING UNIT

FOR ALL NO. 11 DUST & WASTE EXTRACTORS

- ★ Offers 30% (approx.) increase in cleaning efficiency of No. 11 Dust and Waste Extractors.
- ★ No extra beating of the stock — no increase in fibre breakage or neps



This view shows the passage of stock and droppings through the No. 11 Desk and Waste Extractor. All droppings are automatically carried away. Stock movement is indicated by solid lines; droppings by broken line.

Here is one of the low cost answers to help in proper cleaning of the poor 1957 cotton crop. This new Cleaning Unit is completely automatic, waste never has to be removed manually, does not require extra labor to operate. Mill tests show that the quantity of trash removed by this NEW CLEANING UNIT is equal approximately to 1/3rd of the amount of waste removed by any efficient unit in the opening line. Waste taken out includes motes, stem, leaf, boll and seed fragments. Is installed easily and inexpensively, assures cleaner stock that results in higher quality yarn.

Contact your nearest Saco-Lowell Sales Office for complete information.

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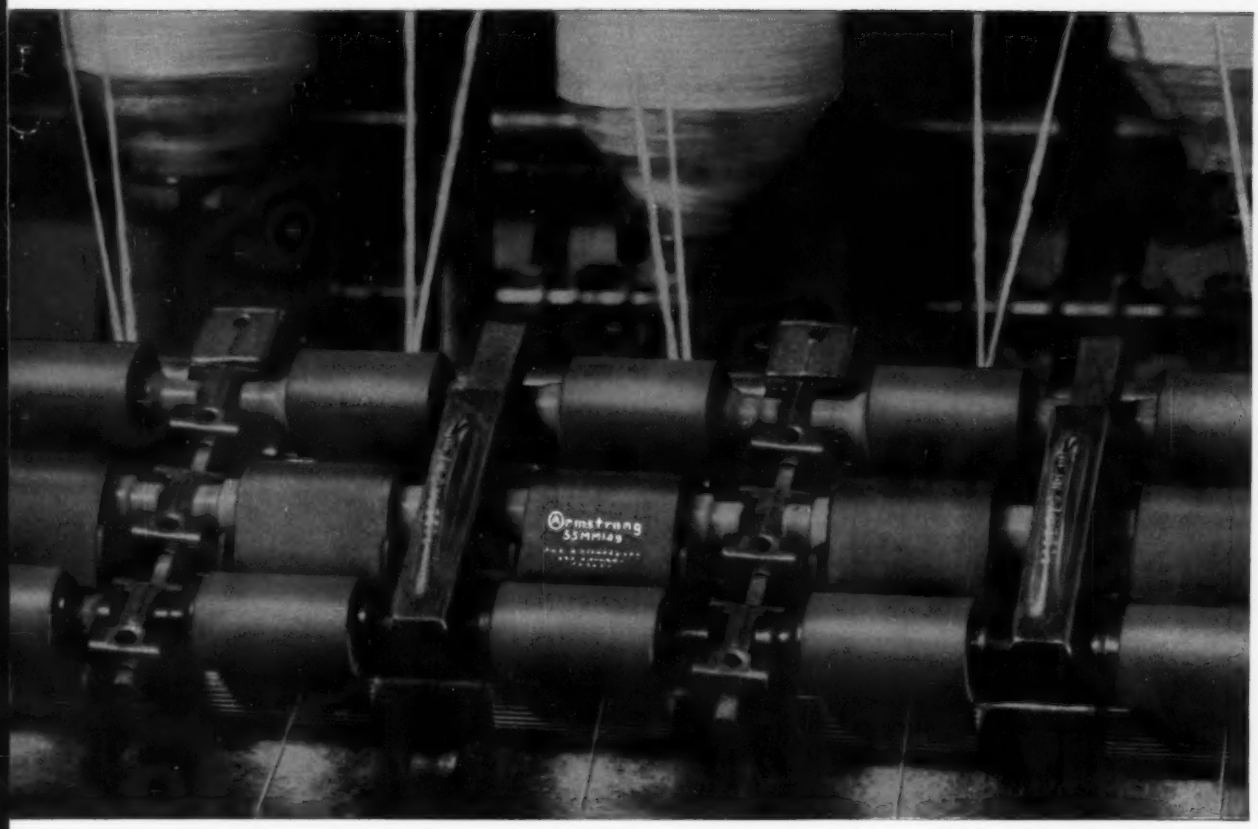
Precision-made Armstrong get high production of

Constant control of the fibers results in fewer irregularities and greater yarn strength . . . helps you keep production at peak quality.



Accotex Aprons help you strong, uniform yarn

The right spinning apron can make an important difference in helping you get top-quality production from modern high-draft frames. That's why hundreds of mills have standardized on Armstrong Accotex Aprons.

Like the equipment they run on, these aprons are precision-made to give you superior yarn control and smooth drafting action. As a result, Accotex Aprons fit snugly and run smoothly, shift after shift, for years.

A big reason for this performance is that each Accotex Apron ordered for a specific frame is identical in every respect . . . in size, frictional qualities, flexibility, and abrasion resistance.

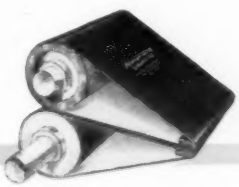
The special rubber compounds used in Accotex Aprons are precision-made, too. The different compounds used on the inner and outer surfaces are specially tailored for the job each must do.

Advanced production methods and skillful rubber compounding . . . combined with careful inspection . . . all help produce a top-quality apron that will help you get the best performance from your high-draft frames.

If you're not already using Accotex Aprons, ask your Armstrong man to arrange for a test next time he calls. Or write Armstrong Cork Company, Industrial Division, 6407 Ivy Street, Lancaster, Pennsylvania.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts



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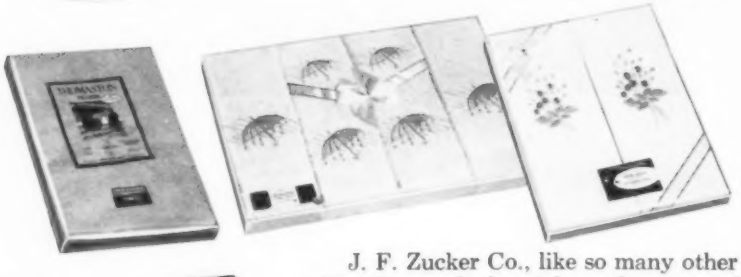
WRAPS AUTOMATICALLY...
with ALL PLASTIC FILMS!

J. F. Zucker Co. wraps sheets, pillow cases, towels and towel sets, curtains, etc. on their new Hayssen.



J. F. Zucker Co., like so many other Textile people, has taken advantage of new low-cost plastic films teamed with economical Hayssen automatic wrapping to give them the ultimate in finer protective packaging.

Hayssen is the only proven machine to successfully overwrap in polyethylene without cards, boxes or trays.

Hayssen offers the greatest savings in material, labor and handling while producing the smoothest, most sales appealing package.

Let our experienced packaging engineers help you with your packaging problems. Contact us today!

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Minneapolis • New York • Philadelphia • St. Louis • San Francisco • Montreal • Toronto • Vancouver

Shorts and Remnants

(Continued from page 8)

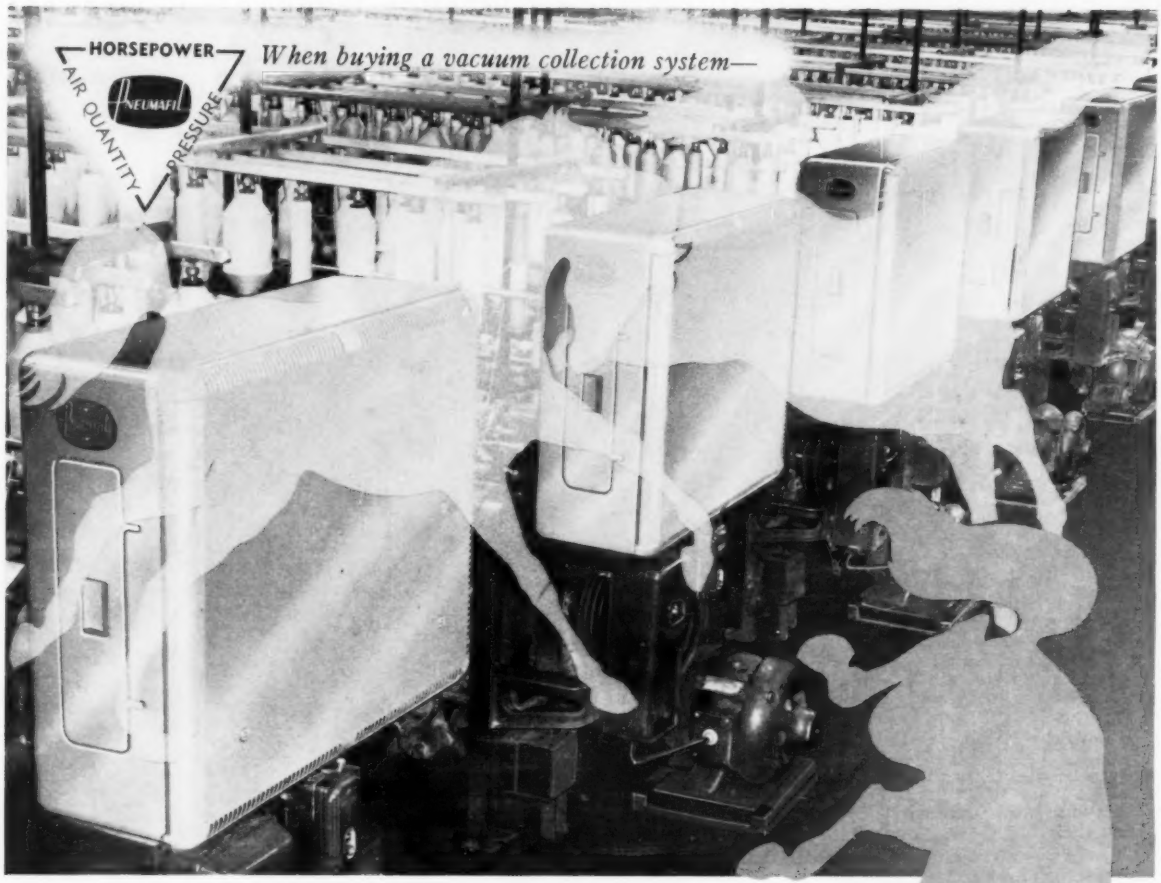
on up to the summit without orders. Grant himself said, "Who ordered those men to go on?"

There probably is a moral there, something like the experts claim a bee's structure and wing spread make it impossible for him to fly, but the bee doesn't know it.

Anyway that's what the museum at Chattanooga is all about. And if you want to know more about it, look up the display first time you are there, read your history books, or better still wait for the Nov. issue of TI and ole S&R will tell you more if he doesn't get started on Armistice Day or Thanksgiving. We will even tell you more about Lee's surrender to Grant not ending the war but leaving three Confederate armies still holding out.

► Just so you'll see we play no favorites, we present for you here a picture by our Assoc. Ed. **Jesse Ellington** of a marker between Sylacauga and Gadsden, Ala., and saying "This marks the place where Gen. N. B. Forrest with 332 men captured Col. A. D. Streight with 1466 men May 3, 1863." Now there's old Nathan Bedford, "firstest" but not with the "mostest," for you.

► While we are thinking about Chattanooga, we see by the papers that **Grant** (not U. S.) **Gant** of Dixie Mercerizing Co. makes a crack about thieves robbing the safe in the Polk County, Tenn., courthouse and taking the election returns for the next three years.



When buying a vacuum collection system—

here's how to keep rampaging horses out of your spinning room . . .

(or—how to get MORE cleaning from LESS horsepower)

Now you can have superior cleaning at **even lower** horsepower requirements. Special design features of our latest equipment actually enables it to "swallow" more air per horsepower. Every effort has been made to squeeze the maximum work load from each unit of operating horsepower.

To you this means:

EFFICIENCY—More cleaning per dollar of operating costs
SAVINGS——Lower operating cost per CFM
CONTROL——No excessive heat loads to unbalance room conditions
PROFITS——No high horsepower requirements to eat up profits

These are the results you want—they are what you pay for. With equipment made by Pneumafil Corporation, you are sure to get the best yarn quality and production at the lowest operating cost.
Get the complete Pneumafil Story, — know why practical mill men choose PNEUMAFIL.

© 1958 Pneumafil Corp.

PNEUMAFIL®

PNEUMAFIL CORPORATION, CHARLOTTE 8, N. C.

UNIT SYSTEM • CENTRAL AIR HANDLING • CENTRAL MATERIALS RECOVERY
LINT FREE CREEL • PNEUMASTOP • PNEUMAKOOL • PNEUMACLEAR • PNEUMACARD

DIRT-RESISTANT Tennantized floor allows faster sweeping. Saves manhours.

Why most money-making mills have TENNANT-maintained floors

Mills that make money *today* usually know their maintenance costs to a penny.

That's why about 9 out of 10 successful mills, large and small, use the TENNANT SYSTEM of Floor Maintenance.

They know, from their own cost records, that this system provides clean, bright floors *at the lowest cost per sq. ft. of any floor maintenance method* available today. Here's why:

SAVES MANHOURS—*Tennantized* floors have 3 times the dirt resistance of most textile floors. Saves cleaning time, cuts sweeping costs, etc.

How the TENNANT SYSTEM cuts floor care costs...

1 **SAVES TIME.** Dirt is easily wiped off surface.

2 **SAVES FLOOR SEAL.** Tennantized floors seldom need refinishing.

3 **SAVES BUFFING.** New method brightens floor; cuts buffing time as much as 80%.

REQUIRES LESS FLOOR SEAL—New custom-fitted TENNANT seals *last longer than any comparable materials we know of.* Cuts annual seal costs and recoating expense. WRITE TODAY *for full details. G. H. Tennant Co., 735H N. Lilac Drive, Minneapolis 22, Minn.*

TENNANT

The Textile Industry's Most Widely Used

FLOOR MAINTENANCE SYSTEM

Methods

Machines

Materials

FLOOR MAINTENANCE SYSTEMS

Shorts and Remnants

Man-Made Fibers

"We would very much appreciate your sending us a reprint of 'Properties and Uses of the Man-Made Fibers' [Sept. '57] . . . "

AL MARASCA
Milliken Woolens,
Los Angeles, Calif.

"Will you please send me a reprint. . . "

EARLE F. WEBSTER
Quaker Rubber Div.
Philadelphia, Pa.

► Watch for another special section on synthetics, next month—Aug.

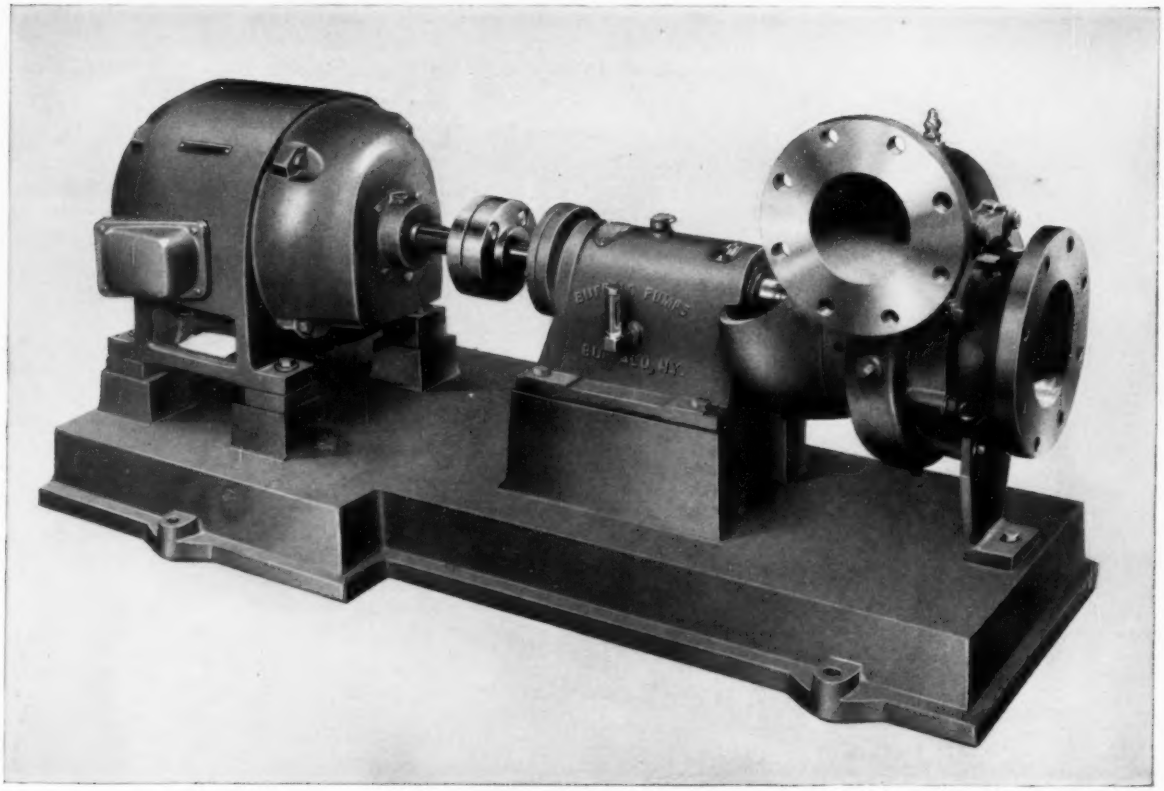
One of the Better

"I have enjoyed your magazine for many years now and feel that you have one of the better textile publications. I have read the articles published in March, April, and May [1958] entitled "The Tape Condenser" by William J. Crofts. These articles are of practical interest to my Carding Overseer and Shift Supervisors. . . "

T. WILLIAMSON
Greige Mill Supt.
Amerotron Corp.
Barnwell, S. C.

► Also, from **Edward M. Moir** of Crown Woolen Mills Corp., Marcellus, N. Y., comes a request for reprints of above mentioned articles. Maybe we had better reprint that series. Tear sheets are all gone.

► Reprint requests continue for "Identification of Dyestuffs on Textiles [Jan. '58], including Research Div. West Point Mfg. Co., Shawmut, Ala. A purchase order from Celanese Corp., Narrows, Va., wants two copies of "Activity Vector Analysis [Mar. '51]. **E. Thornton,** S. Dodd & Sons, Ltd. Oldham, Lanc., Eng., asks for 50 copies of SRRL opener-cleaner article ["Machine Removes One-Third of Trash" (April '58)], and we don't have that many but maybe **R. J. Cheatham** of SRRL in New Orleans, La., can furnish as he writes us that this division "attempts to maintain adequate supplies of our publications for which we have frequent demands." **Louis Pacheco, Jr.,** New Bedford (Mass.) Inst. of Tech., asks for 10 copies of "Spinning Tests" [Mar. '58]; **Wm. P. Flanders,** N. Y., wants another copy of abstract on future of non-wovens from same issue. And **Howard Toney,** Marion (N. C.) Mfg. Co., writes that our booklet on "Spinning Room Practice" is "most interesting," and he wants



AVOID COSTLY DOWN-TIME WITH DEPENDABLE "BUFFALO" PUMPS

"Buffalo" Full Ball Bearing Single Suction Pumps are designed and built *to stay on the job* — month after month, year after year — under the most severe pumping conditions. All parts subject to strain and wear are of extra-heavy construction.

High-efficiency impellers provide peak performance. Because these impellers are enclosed, their initial optimum efficiency is maintained over a long period of productive use. Oversize bearings, capable of withstanding speeds up to 5000 R. P. M., easily handle the most severe strains imposed on the pump shaft by constant operation. On 2-inch and larger sizes, impellers are hydraulically balanced to eliminate end thrust.

These additional features assure quick and easy servicing of "Buffalo" Full Ball Bearing Pumps:

- Open type mounting frame provides convenient access to stuffing box.
- Casings and casing covers are removable for easy access to impeller.
- Close tolerances throughout permit interchangeability of parts.

"Buffalo" Full Ball Bearing Pumps are widely used for handling hot water with low submergence on suction, or for operating with suction lift as high as 25 feet on cold water.

For a long life of dependable, maintenance-free service — for insurance against expensive down-time — it will pay you to specify "Buffalo" Full Ball Bearing Single Suction Pumps. Contact your nearby "Buffalo" engineering representative, or write direct for Bulletin 976-F.

"Buffalo" PUMPS

BUFFALO PUMPS

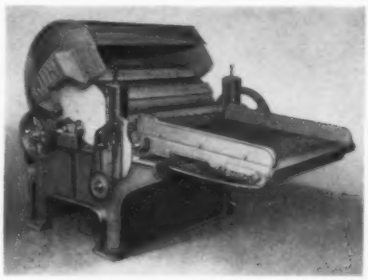
Division of Buffalo Forge Co.
175 MORTIMER STREET • BUFFALO, N. Y.
Canada Pumps, Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

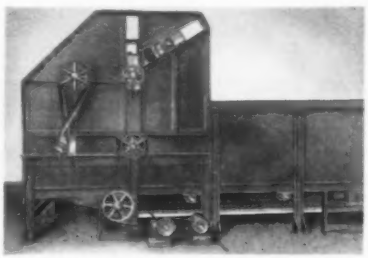
"Buffalo" Pumps feature the "Q" Factor—the built-in QUALITY that provides trouble-free satisfaction and long life.

For Better Fibre Processing
SARGENT
OPENERS, PICKERS, DUSTERS
any fibre – any blend

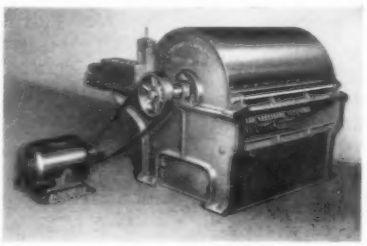
From heaviest grease wool to finest dyed synthetic staple, there's a Sargent to do the job with automatic, continuous precision. Set it and forget it — dependable, rugged, economical machines that pay for themselves many times over in quality fibre protection — in steady, trouble-free production. All are adaptable to double duty. All are designed to make the next succeeding process easier, quicker, better. All save every usable fibre for utmost processing economy for you. It will pay you to look into Sargent equipment without delay.



Wet-and-Dry Picker for synthetic staple after drying, for opening bleached cotton prior to drying.



Heavy Duty Opener with built-in Rotary Feed for opening compressed bales of wool, cotton, synthetics; compacted cheeses of dyed fibres. Semi-combing action for more uniform web to card.



Sargent's Mixing Picker — high speed — for continuous blending systems.

Cott Openers, Crush Roll Machines, Bale Openers, Rotary Feed Openers, Burr Pickers, Squirrel Cage Dusters, Carbonizing Dusters, Mixing Pickers, Cone Dusters, Rag Dusters, Picker-Dusters.

C. G. SARGENT'S SONS CORPORATION
Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA 19 — F. E. Wasson, 519 Murdock Road
CINCINNATI 15 — A. L. Merrifield, 730 Brooks Avenue
CHICAGO 44 — John Law & Co., 5850 West Lake St.
DETROIT 27 — Clifford Armstrong Co., 16187 Grand River Ave.
HOUSTON 17, TEX. — The Alpha Engineering Co., Box 12371
CHARLOTTE, N.C. — W. S. Anderson, Carolina Specialty Co.
ATLANTA, GA. — J. R. Angel, Mortgage Guarantee Building
TORONTO 1, CAN. — Hugh Williams & Co., 27 Wellington St. East

Shorts and Remnants

more on basic textile calculations.

► **Luke Castile** and his flat hat (shown here) have been familiar to

many at the Keever Starch Co. booths at Southern Textile Expositions. He also sold starch, we hear. Anyway, Luke retired from active duty with Keever upon his recent 34th Anniversary. Best wishes, Luke, and come and see us at Greenville. We will be there at Booth 408.

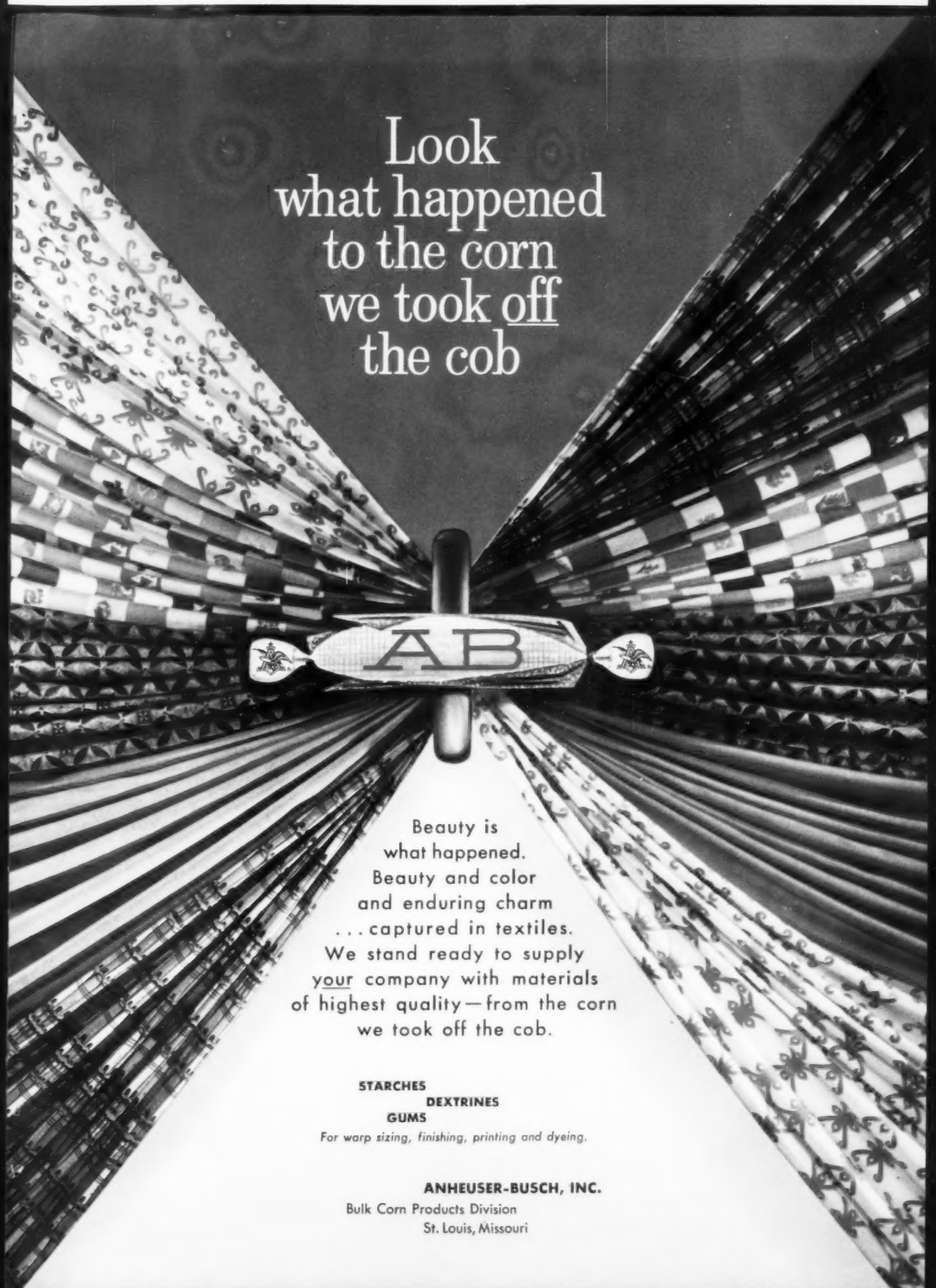
►Don't forget the Southern Textile Exposition in Greenville, S. C., October 6-10.

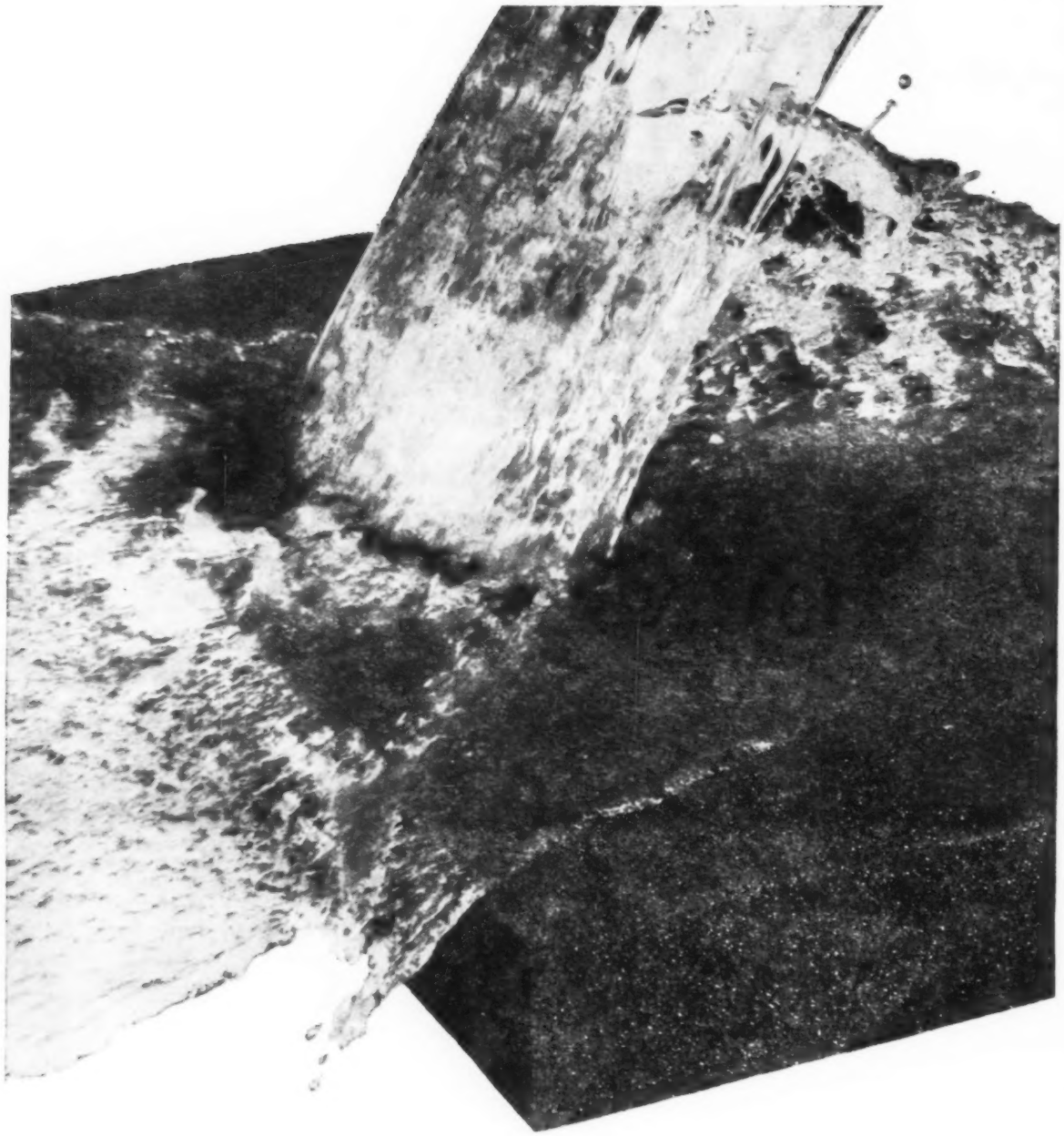
They Want to Buy

Herbert M. Suess, Eleanor Knitting Mill, Inc., Elkins Park, Pa., wants source for buying liquid detergent for spotting mentioned in "They Tend to Their Tricot Knitting" [Feb. '58]; **J. A. Taraporevala,** Bombay (India) Dyeing & Mfg. Co., Ltd., wants Acme Steel cloth packaging machinery [Mar. '58] with prices and delivery India; **W. C. Bugg,** Stores Supt. E. I. du Pont de Nemours & Co., Richmond, Va., wants more on Tennant heavy-duty floor seal [May '58]; **Robert K. Reloff,** J. P. Stevens & Co., Inc., N. Y., wants more on Celanese Celoperm colors [May '58]; **Arnold Luster,** Fibre Cone Co., Los Angeles, Calif., asks more on General Latex upholstery fabric backing [May '58].

So if you see what you want, write for it; if you don't see what you want, we'll try to find it for you.

(Continued on page 20)


Look
what happened
to the corn
we took off
the cob
AB
Beauty is
what happened.
Beauty and color
and enduring charm
. . . captured in textiles.
We stand ready to supply
your company with materials
of highest quality—from the corn
we took off the cob.
STARCHES
DEXTRINES
GUMS
For warp sizing, finishing, printing and dyeing.
ANHEUSER-BUSCH, INC.
Bulk Corn Products Division
St. Louis, Missouri



. . . always an insulation investment; never an insulating expense

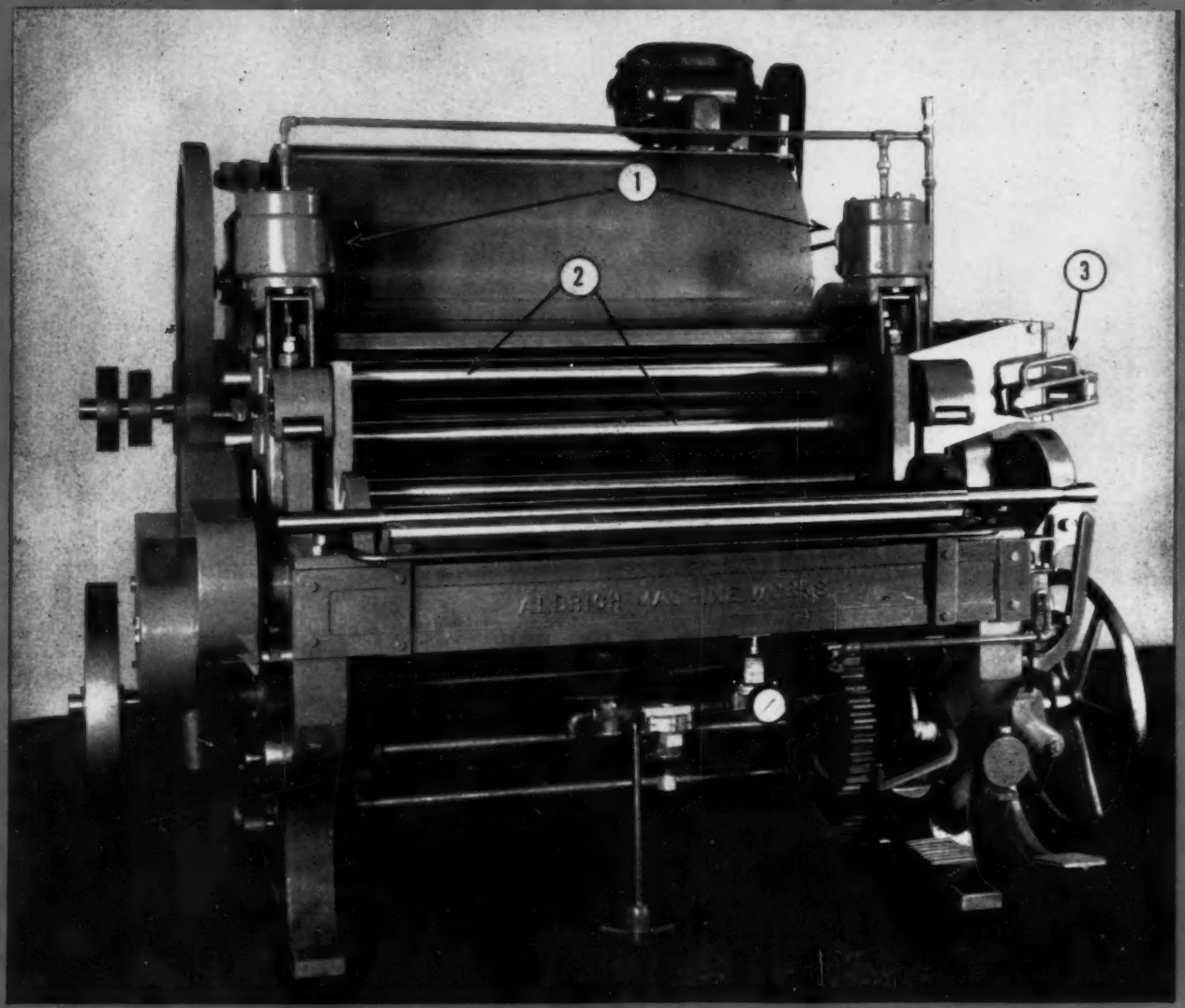
FOAMGLAS® IS MOISTURE-PROOF

Insulation that absorbs moisture soon stops insulating. That happens to most insulations, in time. It never happens to FOAMGLAS . . . because FOAMGLAS is moisture-proof. Its sealed glass cells can never absorb water or vapor. It always maintains its full, original insulating value. There's more to this insulation investment story. FOAMGLAS is incombustible . . . dimensionally stable . . . unusually strong . . . acid-proof . . . vermin-proof . . . easy, economical to handle and install. Find out how to make this long-term investment in your own insulated buildings and equipment. Write for our latest catalog.

PITTSBURGH CORNING CORPORATION

Dept. AG-78, One Gateway Center, Pittsburgh 22, Pa. • In Canada: 57 Bloor Street West, Toronto, Ontario

The ALDRICH HIGH COMPRESSION CALENDER



1 Diaphragm air cylinders, having neither pistons nor stuffing boxes, apply resilient pressure up to 12,000 pounds upon the calender rolls. Resilient pressure gives more uniform calendering, and protects the calender from shock loads. All pressure is released *each* time the calender stops, and is instantly applied when it starts.

2 Meehanite calender rolls, stronger and smoother than grey iron, are carried on roller bearings which fit standard roll necks. The special mountings for these bearings keep the rolls perfectly aligned at all times. This is *very* important where more than three times the usual pressure is applied to the rolls.

3 Pneumatic Lap Pin Extractor exerts a pull of 800 pounds to remove the pin from the tightest lap.

AldricH MachinE WorkS
Greenwood, South Carolina

Fast, accurate yarn count . . .

with SHADOGRAPH® direct-reading scale

Model 4142 Shadograph, shown above, provides a fast, precise method of determining your yarn count number. Direct-reading feature eliminates use of conversion tables. Fully enclosed weigh pan is readily accessible through clear plastic door. Unaffected by air currents. Weight indication by a light projection system gives you a true chart reading. No parallax. Has a capacity capable of handling up to 250 grains which includes yarn count to No. 4. A simple, positive selector enables rapid selection of any one of five ranges. Write for Bulletin 3307.

FOR ACCURACY IN MICRONAIRE TEST

Model 4104-A, right, is precision-designed for weighing samples in conjunction with the Sheffield Micronaire testing machine. Dial is graduated with 1" of indicator travel equal to 15 grains, over and under. Write for Bulletin 3308.

SHADOGRAPH MODEL 4104-A

Exact Weight SCALES

THE EXACT WEIGHT SCALE CO.
922 W. FIFTH AVE., COLUMBUS 8, OHIO
In Canada: P.O. Box 179, Station S, Toronto 18, Ont.

Sales and Service Coast to Coast

Find us in your local "Yellow Pages"

BETTER QUALITY CONTROL . . . . . BETTER COST CONTROL

Shorts and Remnants

(Continued from page 16)

► We got a couple of comments on a phrase we ran once on "Keep sending the money." Well, we looked this up. A friend of S&R in Sao Paulo, Brazil, gave us a copy of the following letter supposedly written by an Irishman to an American cousin:

Queenstown, Ireland
August 31, 1894

Dear Cousin,
You have gone high places in America, God bless you, I hope you'll not be putting on airs and forgotten your native land.

Your cousin McSweeney was hung in the market place last week for killing a policeman, may God rest his soul, and may God's curse be on Jimmy Rogers, the informer, and may he burn in hell, God forgive me.

We had a grand time at Pat Muldoon's wake. He was an old Blatherskite and it looked good to see him stretched out with his big mouth shut. He is better off dead, and he'll burn till the damn place freezes over. He had too many friends among the Orangemen, God curse the lot of them.

Bless your heart, I almost forgot to tell you about your Uncle Dinny. He took a pot shot at a turncoat, from in the back of a hedge, but he had too much drink in him and missed. God's curse be on the whiskey.

I hope this letter finds you in good health and may God keep reminding you to keep sending the money.

Father O'Flaherty, who baptized you, is now feeble-minded and sends you his blessing. Molly O'Brien, the red haired brat you used to go to school with, has married an Englishman. She'll have no luck.

May God take care of the lot of you and keep you from sudden death.

Your devoted cousin,
Timothy

P.S. Keep sending the money.

► So you all keep sending the money for your subscriptions and for your advertising, and here's our sentiments.

RUGGED

MORTON SYSTEM STOCK DYEING AND BLEACHING MACHINES ARE PLENTY RUGGED!

All parts of Morton System Dyeing Machinery are designed and manufactured for heavy-duty dyehouse operation. Whether cotton, wool or synthetics, you get better dyeing, better drying time after time.

Morton System Dyeing and Drying Machinery is built to comply with the requirements of the American Society of Mechanical Engineers Code—300° F.

MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:
BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — STAINLESS STEEL DYE TUBES — CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS

SPOTLIGHTING THE NEWS

In Textile Chemicals

Here in capsule form are new developments in textile chemistry that can open additional avenues for investigation and analysis. There are ideas on how to improve products with chelating agents—hints on preservatives, better dyeing techniques. Here also are offered new technical bulletins on chemical products that can prove profitable to every textile manufacturer.

You may wish to check certain items in this advertisement and forward to those concerned in your own company.

Route to:

_____

_____

_____

_____

ECONOMIES OF CHELATING AGENTS ATTRACT PROFIT-MINDED TEXTILE MEN

Since beginning to market Versene®, Dow has led the trend toward attractive price levels for chelating agents. As a basic producer of chelating agents, Dow is cooperating with textile men to make possible greater fiber production economies and efficiencies.

Why this strong belief in the future? Dow reasons that if a chemical product can be provided to save textile processors thousands of dollars by preventing spoilage of goods, by shortening processes, or by eliminating certain operations, the new plant facilities at Freeport, Texas are not a gamble—they are a smart investment!

One textile purchasing agent remarked, "This new plant means a sure, dependable supply of chelating agents—and at reasonable prices, too". For Dow's lineup of chelating agents and the problems they solve, see above right.

Proven applications are many—and are mounting. Removing impurities from wool before it is woven, inactivating iron, calcium and magnesium ions in the Kier boiling operation, simplifying peroxide bleaching, eliminating problems of discoloration and unevenness in rayon processing and textile dyeing lead the list.

The wide versatility of chelating agents is providing textile men with answers to problems of every kind and description.

PROBLEM	pH CONDITION	CHELATING AGENT
Iron and other metals in dyeing, scouring, stripping, and desizing operations.	2.0— 7.0	Versene* 100 (solution form) Versene Flake or Powder—Na_4 EDTA
Iron and other metals in dyeing, scouring, stripping, and desizing operations.	7.0—10.5	Versene* 100 (solution form) Versene Flake or Powder—Na_4 EDTA
Dyebath operations where highest purity chelating agent is required.	2.0— 7.0	Versene Acid—EDTA
Iron and other heavy metal ions in peroxide bleaching operations.	7.0—10.5	Versenex* 80 (solution form) Na DTPA
Only iron is a problem in dyeing or scouring.	5.5— 9.5	Versene Fe-3 Specific* (solution form)—Na DHEG
Iron and other metal ions in boil-off, kiering units caustic saturator box.	10.5 and above	Versene 100 or Versenex 80 plus triethanolamine.

*TRADEMARK

Wherever there are troublesome metal ions—wherever there are staining, bronzing, bleaching or tenderizing problems—and wherever there are dyeing and discoloration problems, Versene, Versenol® and Versenex are showing their value.

The faith and activities of many people represented by the new chelating agent plant at Freeport, Texas, attest to the fact that Dow believes in the textile industry and its ability to make effective use of chelating agents.

● STARTLING DYE SOLVENT

Makes colors brighter, deeper

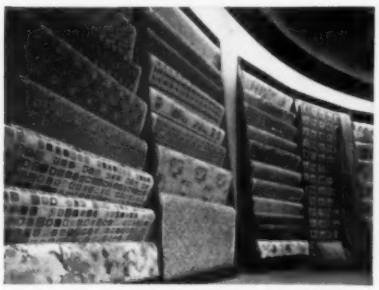
From the ranks of Dowanol® compounds (glycol ether solvents) steps Dowanol DE-SG, a modified version of Dowanol DE (diethylene glycol ethyl

DOW CHEMICALS
BASIC TO THE TEXTILE INDUSTRY

Glycol Ethers • Alkalies • Thickeners
Industrial Glycols • Glycerine • Chelating Agents
Ion Exchange Resins • Preservatives • Solvents • Polyols

ether). Used as a solvent with alkyd-containing pastes, Dowanol DE-SG controls evaporation, aids penetration and leveling.

One Georgia manufacturer who uses indigo type dyes almost exclusively remarked, "A small quantity of Dowanol DE-SG greatly increases the solubility of my dye. Result: Brighter colors and enhanced resistance to crocking."



Dye colors made brighter and deeper with Dowanol

Other manufacturers have found that when this Dowanol product is used in conjunction with triethanolamine in the production of denim, a color shade approximately 15 percent deeper than that gained through usual dyeing methods is obtained.

TYPICAL TEXTILE DYEING FORMULATION

Indigo Powder	10 ounces
Dowanol DE-SG	27 ounces
Triethanolamine	14 ounces
Sulfite Liquor	100 gallons

Complete data covering reactions, uses, analytical methods, toxicological and handling information on Dowanol compounds (the industry's widest line of glycol ether solvent) is found in Dow's new 52 page Dowanol booklet, available upon request.

★ ★ ★ ★

For further information on Textile Chemicals, contact Chemicals Sales Department 773T, THE DOW CHEMICAL COMPANY, Midland, Michigan.

*TRADEMARK OF THE DOW CHEMICAL COMPANY

YOU CAN DEPEND ON DOW

Proud **CAUSTIC** *shows youngsters fancy footwork*

Although not as glamorous as its younger relative, Versene, Dow's caustic soda still continues to play a major role in many textile manufacturers' bleaching, mercerizing and processing plans. And Dow caustic can make a boast of its own, not true of many of today's highly publicized and specialized "laboratory" chemicals—it is produced in four separate plants and is available from eight additional terminal points.

So when it comes to fast footwork—getting there on time ("I need it yesterday!")—no young upstart (or old-timer) is going to get there before Dow caustic!

other Dow chemicals MAKING TEXTILE NEWS

CHLOROTHENE

This new, safer industrial solvent saves time and money in cold cleaning electrical equipment, machinery and small parts. Chlorothene® can be efficiently used for spray, bucket dip or wipe cleaning.

METHOCEL

Industry's widest line of synthetic methylcellulose products reported on in new 60-page booklet. New, easier formulating techniques explained in detail—also three new products—Methocel® 60HG, 70HG and 90HG.

DOWICIDE G

Economical preservative that protects water-based sizing from spoilage. It's reported Dowicide® G is particularly useful in preventing mildew on sized warp yarns or grey goods when stored. Fourteen formulations available.

POLYOLS

Many hundreds of Dow polyols available as humectants and solvents. New folder on "World's Widest Line of Polyols" gives further details on polyols, their properties and potential uses. Exciting possibilities promised by new "unheard of" polyols.

The Springs Cotton Mills' lint problems are wrapped up *here!*

The Springs Cotton Mills' Grace Bleachery, Lancaster, S. C. Air-conditioning system designed and installed by Buensod-Stacey, Inc., Charlotte, N. C.

AAF Auto-AIRMAT filters provide lint-free air for Grace Bleachery

You won't find any "lint on the loose" at Spring Mills' Grace Bleachery in Lancaster, South Carolina. Automatic lint filters—AAF Auto-AIRMATS—are standing guard at eight air conditioning systems supplying 120,320 cfm of clean air.

Auto-AIRMAT is the *only* filter designed to remove lint fibres from the air and clean itself at the same time! Airmat filtering material, winding from roll at top of unit, moves automatically down the face of the filter, collecting lint all the way—rewinds into easily disposable roll at bottom.

If you have a *lint problem,* get all the facts on the *lint filter* — AAF's Auto-AIRMAT. Call your AAF representative or write for Bulletin 234.

AAF American Air Filter COMPANY, INC.

275 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

AAF Filters and Precipitators — AAF Dust Control Equipment

— BETTER AIR IS OUR BUSINESS —

Herman Nelson Unit Heaters — Illinois Heating Specialties

FINEST

Quality

Flat Steel Heddles Since 1897 from

Stehedco

Preferred by ninety-nine out of a hundred mills for longer, trouble-free production.

Ever since flat steel heddles were first introduced to America by Steel Heddle Mfg. Co., the highest standards of quality have been maintained. You can depend on STEHEDCO.

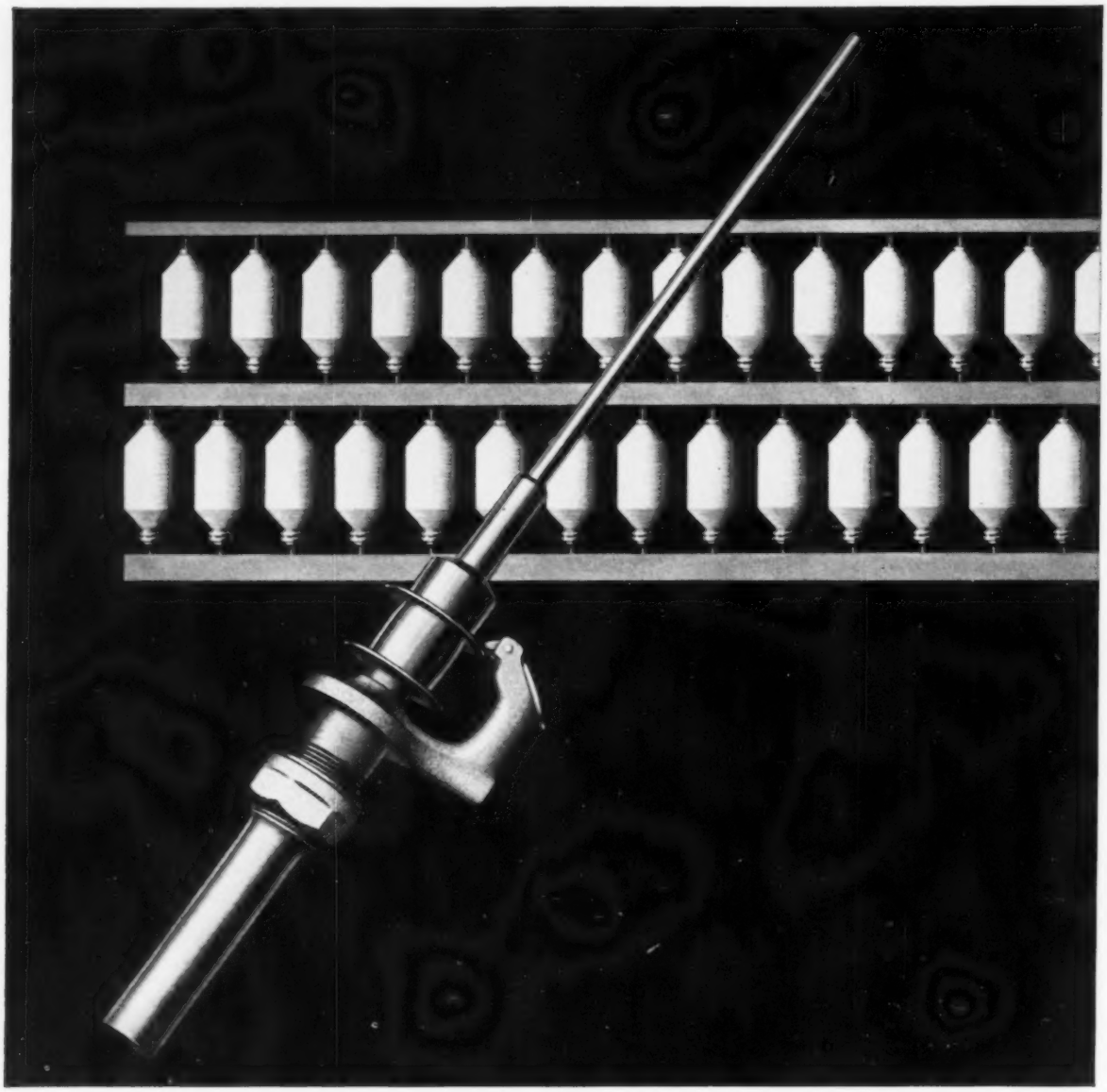
Stehedco has always been first to introduce the newest improvements, and there are Stehedco flat steel heddles of every type for every kind of weaving. They are expertly made of finest quality steel, highly polished to handle your most delicate yarns or heaviest fabric.

Make your next order for Stehedco Quality heddles.

Stehedco
STEEL HEDDLE MFG. CO.
PHILADELPHIA 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S.C.
Southern

H-5810

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.



long-lasting lubrication lengthens bearing life

Premium-grade Spinesso has been specially formulated to solve lubrication problems for high-speed spinning and twister spindle bearings. It minimizes the formation of dark, sludge-like deposits. This means a *cleaner operation, better protection . . . less wear, less frequent lubrication.*

Free-flowing Spinesso gives positive protection particularly at critical start-up time – when fast, dependable lubrication is so necessary in preventing wear. Rusting and pitting, serious problems in the humid atmosphere of most textile mills, are effectively controlled by Spinesso.

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...with the SOLVAY Activated Hydrogen Peroxide Bleaching Process for Cotton

By using the SOLVAY Activated Hydrogen Peroxide Bleaching Process for Cotton, you can save up to 50% in bleaching chemical costs and, at the same time, gain a number of measurable advantages.

You get whiteness that equals or surpasses the results you're now getting. You increase purity, reduce color reversion tendencies and ash and metals content, and raise absorbency rates—even with moderately hard water —and without harm to the cloth.

This method has been thoroughly tested and is now in successful use in full-scale commercial operation. Application for a patent covering the SOLVAY Activated Hydrogen Peroxide Bleaching Process has been filed. The process is available to bleachers under a royalty-free license.

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☐ Have one of your representatives call to discuss it.

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They look better and sell better because the vibrant beauty of Fairtex Metallics stops the eye and starts the sale!

Fairtex Yarns are non-tarnishing and can be safely washed, dry-cleaned or scoured.

As "soft-as-silk" to the touch, they are smooth, pliable and uniform and do not flake or break.

Fairtex Yarns never lose their glittering glamour and outlast even the fabric itself!

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Three analytical control laboratories and several single-purpose testing stations are located at strategic points in our plant. They check every stage in the processing of *all* products . . . they check *all* finished products to be sure specifications are met exactly. That's why you can depend on Clinton products to do the job for which they are needed.

Your Clinton salesman can help you select the right starches to produce the sizings you want. And, should you need special production advice, *prompt* technical service is available when you need it. Call your Clinton salesman today, or write:

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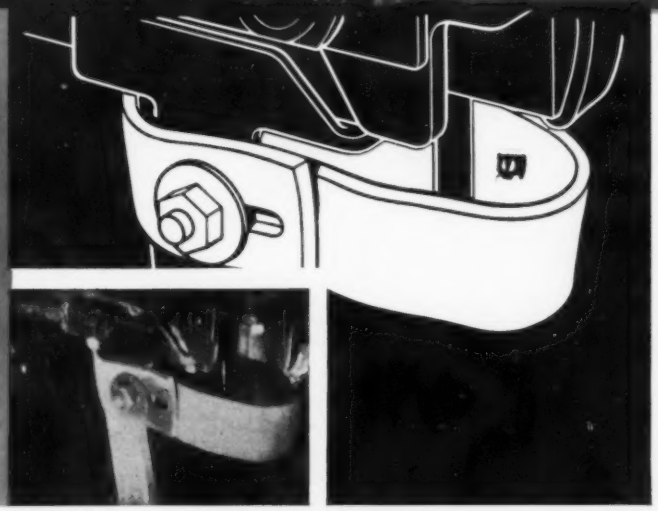
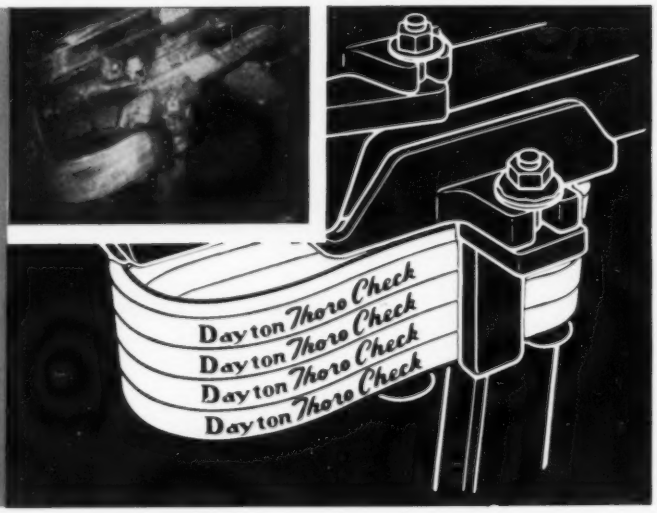
CLINTON

. . . Where research today improves tomorrow's product

In these unretouched high speed photos (insert) you see for the first time the uncontrolled checking action of a side-clamped one-piece check strap. These artist's drawings show this action enlarged.



Positive proof of the superiority of Dayton Endless Thoro-Check Straps is seen in these unretouched photos taken at 2500 frames per minute. This action is enlarged in the artist's drawings.



High Speed Camera Reveals Action with

It happens so fast that no one has ever seen precisely how a check strap operates. That is, until Dayton photographed the action with a high speed camera exposing 2500 frames per minute. For the first time, you can see what actually happens in the less than 1/5 of a second it takes to cast the shuttle.

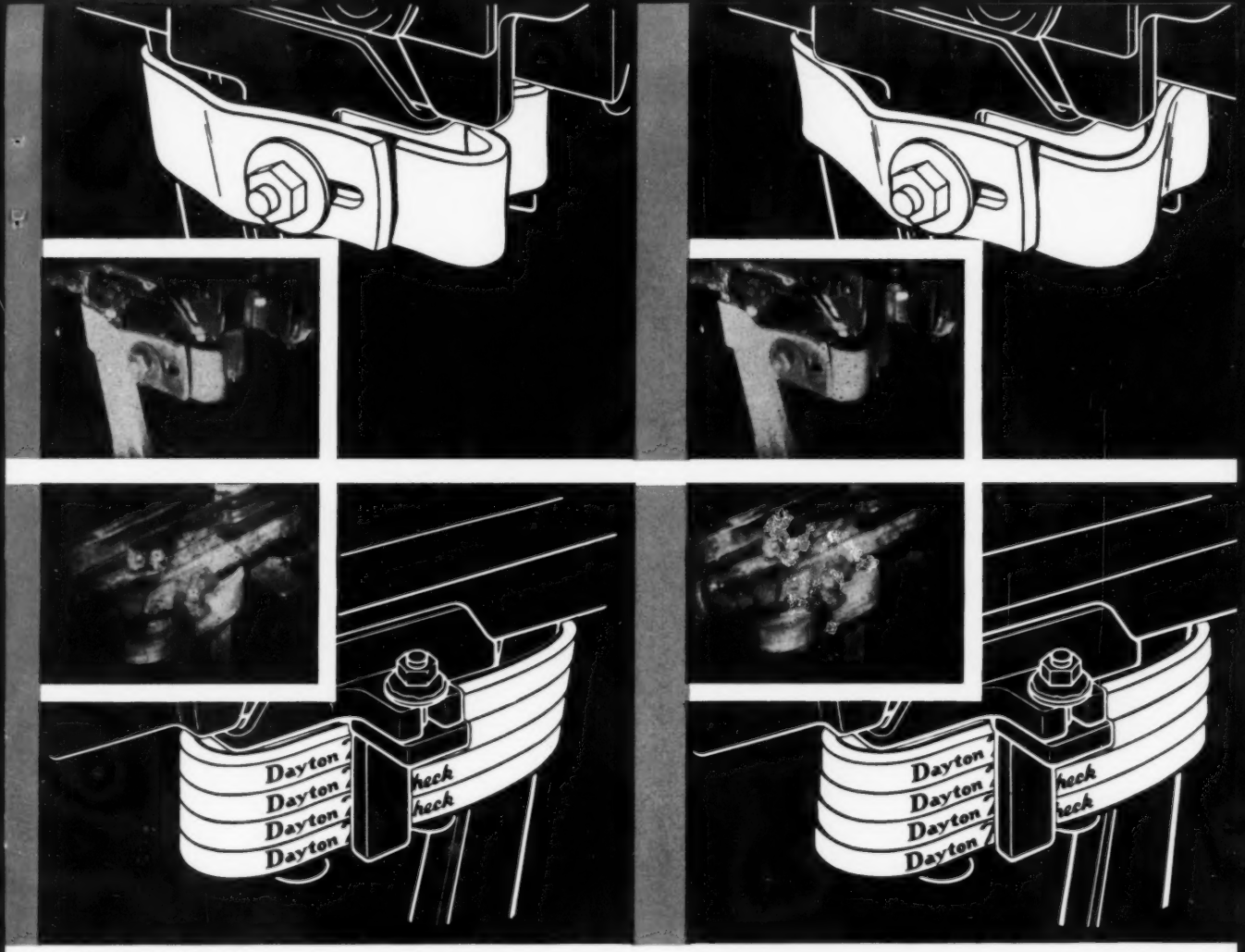
First, you see three unretouched frames taken from a film showing the action of a one-piece check strap. Photo #1 shows the picker stick midway in its stroke. Photo #2 shows how the one-piece check strap has begun to drag on the stick, interfering with the action. **You'll notice that the check strap** is starting to climb the face of the stick and is being severely stretched at a point just ahead of the clamp.

Now look at the loose end of the one-piece check strap in the second and third photos. The tuck which appears on the slack side of the strap indicates that the dragging action is so strong that the strap is jerked forward at an uneven rate of speed. (This action is impossible to see with the naked eye.)

With the hard wear they receive during this uneven checking cycle, it's no wonder that one-piece straps need constant adjustment and last only ⅓ to ½ as long as a set of endless Dayton ThoroCheck Straps.

Now, you'll want to see the action of a set of endless Dayton ThoroCheck Straps. The first of the three photos shows how the ThoroCheck Straps conform to the incline of the picker stick as it is whipped forward to cast the shuttle.

Photo #2 shows the Dayton ThoroCheck Straps



Perfect Checking
Dayton ThoroCheck Straps

slowing the picker stick to a smooth, graduated stop. Notice that there is no deformation of the endless straps and no evidence of any jerking action.

Photo #3 demonstrates the controlled elasticity of the ThoroCheck Straps as they assume their original shape at the end of this action.

With the evidence before you, you can see why mill after mill reports that Dayton ThoroCheck Straps last longer, require less adjustment, and give vital shock protection to their looms.

If you'd like to see the actual film from which these photos were taken, ask your Dayton Representative when it will be available. Or, write The Dayton Rubber Company, Textile Division, 401 S. C. National Bank Building, Greenville, South Carolina.

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving

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". . .that reminds me—I wanted to fix those squeeze rolls. . ."

Reminders are great gadgets. And since we haven't reminded you often (at least not more than three times a month), may we remind you that:

For 54 years we've specialized in manufacturing textile auxilaries and warp size—and that

Seyco products and Seyco service go hand in hand.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

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Whitin Pacemaker* Twisters lead all others by making greater profits for their users over a far longer period of time. This outstanding Whitin Twister for cotton and spun synthetics is setting records for production, uniformity of twist and lowest operating and maintenance costs. Advanced in design and sturdily built, the machine is designed mechanically to run at speeds far beyond fiber and traveler speed limitations. The following features are available:

- **Minimum angulation of yarn path — delivery roll position relative to balloon guide permits nearly vertical path of yarn in twisting zone.**
- **Gear train in head end mounted on antifriction bearings.**
- **Laminated Bakelite gears inter-meshed with metallic gears in head end reduce noise level.**
- **Delivery roll mounted on grease-packed ball bearings.**
- **Nylon insert bearings for top roll gudgeons.**
- **Steel pulleys and through shafts mounted on antifriction bearings reduce maintenance costs.**
- **Antifriction tape tension pulleys.**
- **Stationary support rods for ring rails mounted back of spindle rail to reduce yarn contamination.**
- **Stationary separators mounted on spindle rails extending through slotted ring rails reduce possibility of end breakage at adjoining spindle positions.**
- **Hexagonal steel cross shafts mounted on ball bearings — Broached holes in lifting arms and spring counterweighted ring rails assure maintenance of yarn wind accuracy on bobbins.**

*Trade Mark

For complete information, ask your Whitin representative — or write direct to us.

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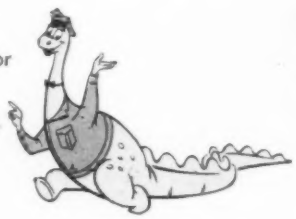
Needles... Knitting... and How to Save Money

Rust and crust on knitting needles are costly problems. But you can eliminate deposits and reduce production costs with Sinclair Crystoil. This superior needle oil has earned a reputation for outstanding performance. And, you'll like its very light color, too. Result—more first-quality products—a more profitable operation. Switch to Crystoil, now. Next time management asks how you've cut costs, tell them you've changed to Sinclair—and show them the results.

Find out more about CRYSTOIL. Call your nearest Sinclair Representative or write Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, New York 20, N. Y. There's no obligation.



SINCLAIR
Crystoil Needle Oils

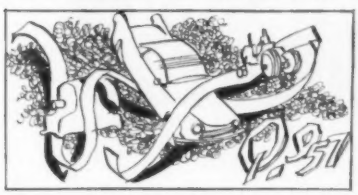
Textile Industries
for July, 1958

News IN BRIEF

Soviet Trade-Aid Threat. Referring to the current Russian economic drive, Commerce Secretary Weeks has warned that "the American people are sitting on a trade-aid time bomb, planted by the

Kremlin, which — unless handled promptly and effectively— could result in severe injury to the United States and the free world." Noting that the Soviet gross national product increased from about one-third that of the U. S. in 1950 to 40 per cent in 1956, Weeks said that trouble, not trade, is the prime objective of Russian aid to underdeveloped countries; and that last year about 70 per cent of the increase in Russia's nonbloc trade was with Western European industrial nations. He ended his speech with a plea for the extension of President Eisenhower's mutual security and reciprocal trade programs to prevent "free world disaster."

New Textile Material. Another move by Dow Chemical Co. in the direction of the textile raw materials market is evident in the an-



nouncement that the company is conducting an evaluation of a "thin, narrow tape," known as Q-957, which can be woven into lightweight fabrics having good cover and relatively high tear strength. Although not revealing anything of the nature of the material, Dow representatives said it would have applications in the industrial, automotive, agricultural, home furnishings, and decorative fields. The company has begun commercial production of its acrylic fiber, Zefran.

Tufteds Continue Climb. Tufted Textile Manufacturers Association believes that tufted broadloom production this year will beat the 56 per cent of the market it held in 1957, and that it may go as high as 70 per cent.

Cone Diversifies. Cone Mills Corp. has acquired a controlling interest in Otto B. May, Inc., chemical and dyestuffs manufacturer of Newark, N. J.

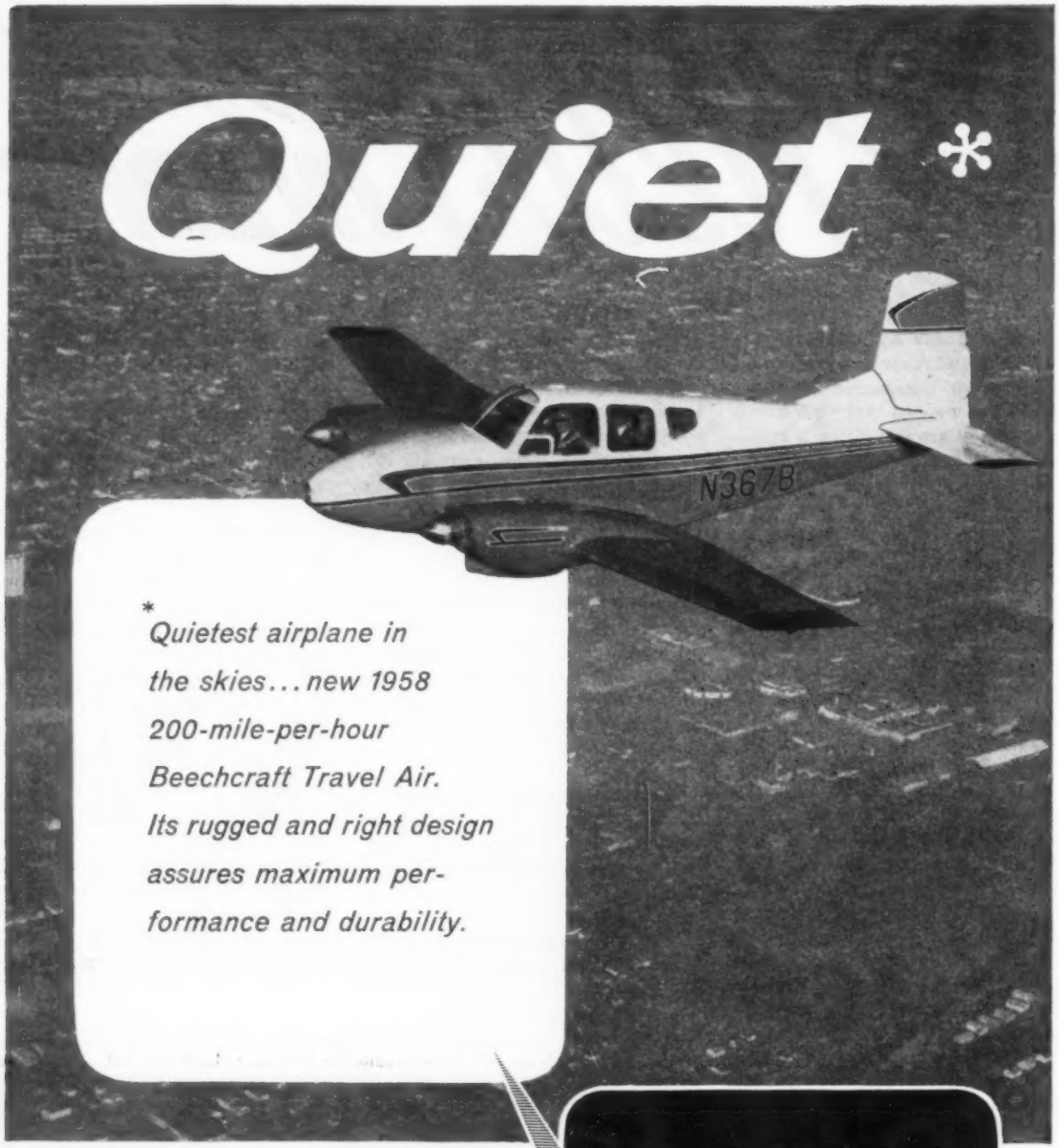
Council Advocates Cotton Choice. The National Cotton Council has proposed that cotton growers be given a choice between higher acreage and lower prices or lower acreage and a higher price, as part of a transitional program pointed toward a competitive, one-price system.

Expanded Wool Promotion. The wool manufacturing industry and the wool producers have joined forces in a major all-industry program to bolster the wool textile in-

dustry. Highlights of the program include celebration of the wool industry's bicentennial in 1960, competition for design of wool products, and television promotions. The campaign was outlined at a re-

This line of rayon damask mattress cover materials is being marketed by Burlington House Fabric Co. Latex is applied by knife-coating in the grey to bond ends and picks in place.

Quiet *



*Quietest airplane in the skies... new 1958 200-mile-per-hour Beechcraft Travel Air. Its rugged and right design assures maximum performance and durability.

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BEECHCRAFT — AIRFLEET OF THE TEXTILE INDUSTRY

cent Boston meeting, attended by representatives of the American Sheep Producers Council, National Association of Wool Manufacturers, Northern Textile Association, Boston Wool Trade Association, Philadelphia Wool and Textile Trade Association, and the U. S. Department of Agriculture.

Hosiery Mill Ruled Unfair. A National Labor Relation Board examiner has ruled that Renfro Hosiery Mills, Mount Airy, N. C., engaged in unfair labor practices. The American Federation of Hosiery Workers charged that the mill questioned and threatened employees in an attempt to prevent organization.

Visitors from Abroad. A group of sweater manufacturers from France toured knitted outerwear mills in New York, Pennsylvania, and Ohio during May. At the same time a nine-man delegation of Russian textile men was inspecting American textile mills.

To Combat Recession. The National Association of Manufacturers has put forward a four-point program to stimulate full economic

activity: tax reform, cutting cost of government, curbing of unions, and adoption by businessmen of an optimistic outlook.

New Number for Dorn Bill. The Dorn Bill, H.R. 11,250, on which the textile industry pins its hopes for stemming a further flood of imports which it believes would follow passage of the Administration's trade bill, has been revised and consolidated in cooperation with other industries. The new Dorn Bill is numbered H.R. 12,512. Privately, few textile men see little chance of the bill's passage.

Metallic Compounds for Cotton. Application of metal compounds to give cotton fabrics better flame resistance, increased water repellency, and better resistance to weathering, mildew, and rot will

Business Now Headed Up?

■ THE ECONOMY has been in the throes of a rapid decline in industrial production but a much slower decline in consumption or final sales for the last seven to eight months. The most pressing question of the moment is whether the current retreat in general business activity will degenerate into a rout—in other words whether the present recession will develop into a deep depression like those of 1929 and 1937 or at least into a setback of much more substantial proportions than the postwar recessions of 1948-49 or 1953-54.

In our opinion, the chances of a repetition of the mass unemployment of 1932 or even of 1938 are negligible. The post-World War II economy is structurally different from its predecessors and is fundamentally less susceptible to prolonged mass unemployment.

Among the reasons why our present economy is much more stable than it used to be are the rather general acceptance of tax reduction as our first line of defense against impending depressions, the magnitude and expansibility of Federal expenditures, our greater immunity to extreme fluctuations in corporate capital expenditures, and the numerous cushions under consumer demand.

It must be conceded, however, that we will probably remain as vulnerable as ever to occasional inventory recessions like those of 1948-49 and 1953-54, but such recessions are by nature self-liquidating and do not permanently divert long-term trends.

We look for the business decline to terminate around the middle of this year, and we further anticipate that both the economy in general (GNP) and the F.R.B. index of industrial production in particular will rise moderately from early summer onward. The gross national product, depressed to an annual rate of $424 billion in the quarter just concluded, is expected to average about $428 billion during second half 1958.

This reversal of the general economic trend will be accomplished, in our opinion, in spite of a continuation of the present downward movement of corporate capital expenditures, which will probably not change direction until early 1959. For the year as a whole, we think that business expenditures on plant and equipment will be $4-5 billion below spending for such purposes in 1957.

The chief reason for our comparative optimism with regard to the behavior of the economy is the rapid rate of inventory liquidation now transpiring. Preliminary estimates indicate that the annual rate of inventory liquidation reached $7.5 billion in the first quarter of this calendar year.

This quite remarkable correction is half again as large as that experienced during any single quarter of the other postwar recessions. With final demand holding up relatively well, this is a rate which cannot be indefinitely maintained. Moreover, even though inventory depletion in the second quarter continues at this rapid rate, inventory disinvestment would cease to exert a further downward pull on the economy.

Another favorable factor in the over-all situation is the strong probability, indeed almost certainty, that Federal, state, and local expenditures will rise in the interval between now and the end of this year, offsetting at least in part the continuing slide in business expenditures for capital purposes.

If, as we expect, a sizable reduction in income taxes is legislated during this session of Congress, such action on the part of the Federal government will serve to fortify the business forecast outlined above; nevertheless we expect the general business trend to cease declining around midyear, even if personal income taxes are left unchanged.—*Charles T. Broderick, chief economist for Lehman Bros., at the recent annual meeting of the Underwear Institute.*

Using Salt Efficiently

by INTERNATIONAL SALT COMPANY, INC.

Making Automatic Salt Dissolvers from Existing Plant Equipment

A great many industrial companies and public institutions are now enjoying the benefits of pure, fully saturated rock-salt brine at remarkably little cost. They have found that expensive new equipment is not needed to make this brine! Instead, International has shown them how to convert unused or unproductive plant equipment into salt dissolvers that operate under the Lixate Brine-Making Process.

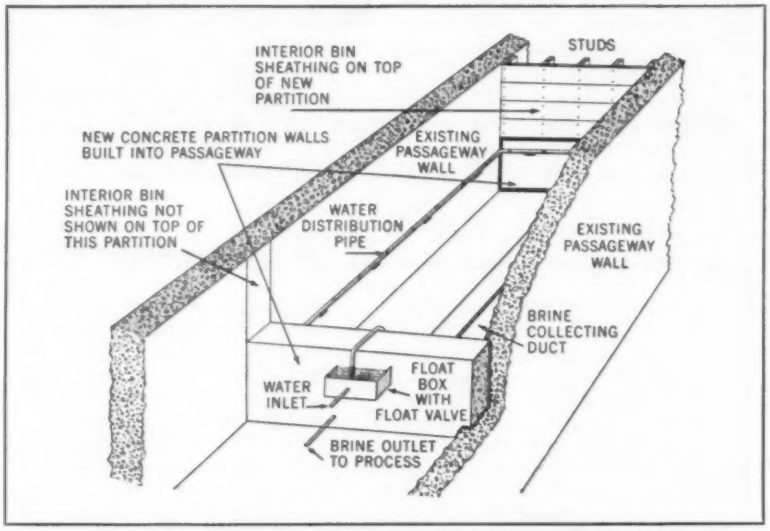
Here are four typical examples from the scores of special salt dissolvers that have been made from unused storage rooms, coal silos, locomotive tenders, dry salt bins, etc. These dissolvers, in addition to saving space, did not require expensive materials for their "construction."

Steel gas tank. Here, an unused circular steel tank under a sidewalk was converted into an underground Storage Lixator. (The Lixator is a rock-salt dissolver developed exclusively by International Salt Company.) This unusual Lixator is fully automatic, needs very little maintenance. Salt delivery is no problem at all: trucks dump Sterling Rock Salt directly through the loading hatches into the tank.

Dry salt storage bin. A few additions converted an existing dry salt storage bin into a rugged dual-unit Storage Lixator. Reinforced concrete was poured to make two 6-ft.-high salt-dissolving tanks in the bottom of the bin. Water inlet and brine discharge pipes, plus a few other necessary pieces of equipment, were installed . . . and the Lixator was ready to operate.

THE LIXATE PROCESS

. . . for making brine works like this: Sterling Rock Salt is stored in a tank called a Lixator. Water is admitted near the top. It flows *down*, dissolving salt as it goes. Soon fully saturated and unable to absorb more salt, this brine is completely self-filtered by the salt crystals in the bottom of the tank. The resulting Lixate Brine is exceptionally pure, clean, high in quality. As this brine is drawn off to points of use, more Sterling Rock Salt flows into the Lixator, and more water is admitted to produce more brine.


INTERIOR BIN SHEATHING ON TOP OF NEW PARTITION
STUDS
NEW CONCRETE PARTITION WALLS BUILT INTO PASSAGEWAY
EXISTING PASSAGEWAY WALL
INTERIOR BIN SHEATHING NOT SHOWN ON TOP OF THIS PARTITION
WATER DISTRIBUTION PIPE
EXISTING PASSAGEWAY WALL
BRINE COLLECTING DUCT
FLOAT BOX WITH FLOAT VALVE
WATER INLET
BRINE OUTLET TO PROCESS

SIMPLIFIED SCHEMATIC DIAGRAM OF A STORAGE LIXATOR BUILT INTO PASSAGEWAY WALLS

Unused basement area. A large industrial plant is now using a basement room to make clean, fully saturated Lixate Brine for water-softener regeneration. Here again, a reinforced-concrete tank makes the lower portion of the room into a watertight salt-dissolving and brine-storage unit. Dry Sterling Rock Salt is stored in the space above the salt-dissolving tank, and in the room directly over the Lixator.

Underneath a railroad trestle. One of the most dramatic Lixator installations is the conversion of the empty space under a railroad trestle. 70 ft. long, 18 ft. wide, and 12 ft. high, this extraordinary Storage Lixator can make thousands of gallons of Lixate Brine per hour. And salt delivery is entirely automatic: Sterling Rock Salt drops *directly* from railroad hopper cars on the trestle into the Lixator.

There are dozens of different Storage Lixators, converted, like the ones described here, from existing plant equipment . . . and tailored to the specific needs of each particular company. If your company could benefit from the conversion of unused space into a Lixator, be sure to contact International Salt Company. One of our experienced sales engineers can show you detailed plans of existing Lixators. He can also work with you to decide on the installation that will best meet your requirements.

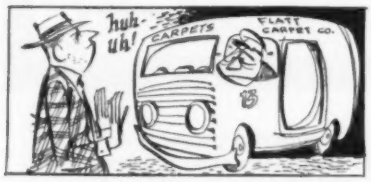
To get this impartial technical assistance, contact your nearest International sales office, or write to us direct.

INTERNATIONAL SALT CO., SCRANTON, PA.
Sales Offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; Memphis, Tenn.; and Richmond, Va.

Service and research are the extras in **STERLING SALT**
PRODUCT OF INTERNATIONAL SALT COMPANY, INC.

be undertaken by the Texas Woman's University at Denton, under a contract with the U.S. Department of Agriculture.

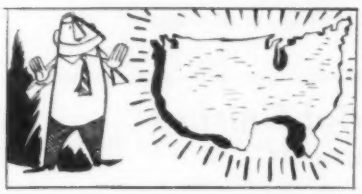
No Carpeting in FHA Mortgages. Federal Housing Authority has ruled that wall-to-wall carpeting can not be included in FHA mort-



gages. American Carpet Institute backed inclusion of carpeting in the mortgages, but most retailers opposed it.

Race Mention not Disqualifying. A statement by a firm in a letter to employees that a union was strongly pro-integration is not grounds for setting aside a bargaining election, the National Labor Relations Board has ruled in a case involving Sharnay Hosiery Mills, Madison, N. C.

"Confidence in America." An illustrated 24-page booklet spelling out the positive factors in America's growth and potential has been released for national distribution



by the Advertising Council. The book predicts a new wave of opportunity for all Americans, citing such factors as a growing U. S. population, more job opportunities, greater income, increased production, higher savings, and broader research. Copies are available free from the Council, at 25 W. 45th St., New York 36, N. Y.

New England Spending Down. New England textile mills plan capital expenditures of $28.2 million in 1958, compared to actual disbursement of $36.7 million in 1957, according to a survey by the Federal Reserve Bank of Boston. Of the $28.2 million, $5.7 million will go for plant and $22.5 for equipment; 37 per cent will go for expansion and 63 per cent for replacement.

NYC Board of Trade Expands. The Textile Section of the New York Board of Trade has expanded its membership to include representatives of fiber producers, grey mills, converters, banks and advertising agencies specializing in the textile field, factors, and finishers.

News in Brief

New Polyester Resin. A new polyester resin, called "Vitel," has been announced by Goodyear Chemical Division. The resin will be supplied to Beaunit Mills for production of its as yet unnamed

Setting the Record Straight on Imports

■ SOME PEOPLE have the mistaken notion that because the textile industry wants something done about unfair competition that we are opposed to world trade. This is definitely not true. We believe in reciprocal world trade, which Cordell Hull tried to encourage. We believe in exchanging those things which we have a surplus of and do not need for those things which other countries have a surplus of and which we need.

In addition to this broad basis for trade, we believe that if a foreign manufacturer can make something better than we can and can sell it in the United States on the basis of quality, he is entitled to do so.

We believe that if the foreign manufacturer is more efficient than we are and can sell his product cheaper here because of this efficiency he is entitled to do so.

We believe that if he can make a more attractive pattern or design than we can and get business here on that account, he is entitled to do so.

We believe that if there is an industry operating in the United States on a monopolistic basis or a near monopolistic basis, it is right and proper for such industry to have competition from abroad regardless of any other condition that may exist.

We do not believe that it is fair for a highly competitive American industry to lose its home market to a foreign competitor solely because the foreign competitor has a cheap price, and has a cheap price solely because he is paying a wage rate which is a fractional part of the legal wage rate in this country, and who has a further advantage in that our Government is selling him American cotton at 20 per cent under the price the American mill must pay and then

Avondale's President Smith

taxing the American mill to make up the difference.

We are definitely not complaining about foreign imports as such. We are complaining bitterly about the unfair conditions created by our own Government. We have no hard feeling toward the foreigner, who is doing only what is natural for him to do—that is, selling his product to his best advantage.

Certainly we have no hard feeling toward the individual Americans who buy these foreign goods after they get here. It is the natural thing for them to do to get what they think is the best value for their money.

All we want is a fair set of rules. And if we can't play the competitive game successfully under a fair set of rules, we want no special favors. We think, in a fair race, we can win. If in a fair race we lose, we know how to lose without crying.—*J. Craig Smith, president of Avondale Mills, in the Avondale Sun.*

PAINT BULLETIN

FROM INDUSTRIAL FINISHES DIVISION
MINNESOTA PAINTS, INC.

SUBJECT: Minnlite Finishes

No. 2 of a new, instructive series of Paint Bulletins. The information, compiled by the Industrial Division of Minnesota Paints, Inc. is the result of intensive research and extensive data collected from numerous successful applications.

It is gratifying to note the interest aroused by our recent Paint Bulletin on floor finishes. This second Bulletin will explain some of the work being done by our Industrial Finishes Division to meet the really tough requirements demanded of wall and ceiling coatings in mills, factories and other manufacturing plants.

In formulating an all-around finish for heavy-duty application, our paint chemists were confronted with many problems. Unlike applications in homes, schools and offices where conditions for paint application are normally favorable, applications of industrial finishes are often made under conditions which are most unfavorable. In spite of this, the finish must flow on smoothly and easily and dry quickly to the *permanent*, superior surface required of a heavy-duty protective coating and the finished surface must withstand exposure conditions which would defeat ordinary coatings.

Minnlite Maintenance Finishes were formulated and test-proven for adaptability to a wide range of exposure conditions including heat, moisture, fumes, acids, alkalies, gases, etc. often present in industrial plants. Formulation of "Minnesota" Minnlite finishes is based upon selected alkyds, re-enforced with synthetic rubber to provide a smooth, tough, flexible surface that insures heavy-duty service combined with pleasing appearance.

Color stability of Minnlite finishes is excellent. Scientifically pigmented colors start bright and stay bright long after ordinary paints become dull and dirty. These finishes are available in a range of safety-proven maintenance colors plus sparkling, sanitary white.

Another advantage of special Minnlite finishes is versatility to overcome difficult maintenance problems in various areas of a plant. In a wide selection of primers and top coats, they provide a complete finishing system for metal, wood, plaster and masonry surfaces.

For detailed information on these economical, heavy-duty finishes or for expert personalized help in solving finishing and maintenance problems, write to Industrial Finishes Division, Minnesota Paints, Inc., 1101 Third Street South, Minneapolis 15, Minnesota

Here is a LINEUP of Minnlite Industrial Finishes

MINNLITE UNDERCOAT WHITE

The ideal first coat application for two-coat work on new or over previously painted surfaces. Especially recommended for porous areas.

MINNLITE GLOSS WHITE

Low in cost, easy to apply. Retains its whiteness under ordinary conditions permitting a longer span of time before repainting. As near fume-proof as a product of this character can be made. Minnlite Gloss Tints also available.

MINNLITE FUME-PROOF UNDERCOAT (RUBBER BASE) WHITE

For use under Minnlite Fume-Proof on all interior wall surfaces subjected to extreme conditions. Easy to apply, quick to dry. Stops suction, resists action of strong chemicals and fungus growth as only rubber can. Controls alkaline and saltpeter conditions; dries quickly even under unfavorable conditions.

MINNLITE EGGSHELL WHITE

Designed to meet the demand for a soft, velvety, semi-gloss effect on factory walls. Has unusual obliterative powers, makes an ideal product for one-coat work over previously painted surfaces.

MINNLITE FUME-PROOF (RUBBER BASE) GLOSS

Produces a gloss white interior wall finish that stays white and will not yellow even under very unfavorable conditions. Entirely unaffected by moisture, steam, fumes, gases. Available in full range of industrial colors.

MINNLITE RUST INHIBITIVE PRIMER

Combats rust and corrosion. Effectively protects metal parts against corrosive attack. Has been used very successfully on air conditioning and other equipment, maintenance and structural materials, pipelines, ducts, etc.

Minnesota PAINTS

MINNESOTA PAINTS, INC.

Your Minnesota Paints Industrial Finishes Representative, with his detailed product knowledge and ability to correctly diagnose your particular problems, can help you select "just the right product" or products. Why not reduce your maintenance material costs and extend your surfaces' lasting power. CONSULT THE MAN FROM "MINNESOTA PAINTS."

This spindle wasn't guaranteed to operate for 22 years...

BUT IT DID!

It has been running since 1936

...largely because it was equipped with an SKF bolster.

Who knows how many more years it will run!

You are always sure of long service life (that far outlasts so called "guarantees") when you specify SKF-equipped spindles. You also can count on:

1. The bearing radial capacity you need to carry bigger packages.
2. The separate damping mechanism feature that minimizes vibration, reduces chances of ends down.
3. The low torque, free running you need to maintain uniform speeds.
4. Maintenance savings, because you only oil these spindles every 3 to 6 thousand operating hours . . . and you *oil them on the frame!*

Why not make sure you keep on getting this long service life and these extra features? Simply specify "SKF-equipped"... *accept no substitutes.* 7842

Spherical, Cylindrical, Ball, and Timken *Tapered Roller Bearings*

EVERY TYPE—EVERY USE

SKF®

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What's behind Celaperm's success?

What makes Celaperm colors so right?

No gimmicks—Celaperm's secret is *shoe leather*. Endless hours covering converters and mills for every color trend. And the taste and talent to interpret them.

Celaperm is right for you:

Do you make dress goods? Men's shirtings? Draperies and curtains? Swimwear? You can style completely in Celaperm acetate—and know you're right. Right in color engineered for specific end-uses. Right in performance—color *sealed-in* for keeps. Celanese Corporation of America, Textile Sales Division, Charlotte, N. C.

Celanese® Celaperm®

Celaperm is right on the beam:

conveniently packaged for economic use—

Filament: 4 lb. cones
solid and pattern 30 x 54 inch weaving beams
pattern 21 x 42 and 14 x 52 inch tricot beams

Bulked: 2 and 3 lb. cones

District Sales Offices: 180 Madison Ave., New York 16, N. Y. • P. O. Box 1414, Charlotte, N. C. 819 Santee St., Los Angeles, California • Room 10-141 Merchandise Mart, Chicago 54, Illinois 200 Boylston St., Chestnut Hill 67, Mass.

Export: Amcel Co., Inc. and Pan Amcel Co., Inc., 180 Madison Avenue, New York 16, N. Y.

In Canada: Chemcell, Canadian Chemical & Cellulose Co., Ltd., 2035 Guy St., Montreal

Celaperm . . . a Celanese contemporary fiber

polyester fiber. Goodyear is already marketing a laminating film from a variation of the resin, under the trade name "Videne."

Duty-Free Wool Bill Signed. President Eisenhower has signed a bill permitting wools up to Grade 46 to enter the U. S. duty-free until June 30, 1960. The concession is of particular importance to carpet manufacturers.

CCC to Purchase 1957-Crop Loan Cotton. Commodity Credit Corp. will purchase all 1957-crop loan cotton, both upland and long staple, which is unredeemed at the close of business on July 31. There were loans outstanding on 3,149,687 bales as of May 9.

New Military Specifications. The Quartermaster Research and Development Command has issued a new "Summary of Specification Requirements for Military Fabrics," Textile Series Report No. 102, providing in summary form a statement of the requirements for textile fabrics used by all the military services. The new publication contains specifications for twice as many fabrics as in the previous edition, issued in 1951. The report is available from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., as PB 131640, at $4 per copy.

Poland Signs Cotton Standards Agreement. The admission of the Gdynia (Poland) Cotton Association as a signatory to the Universal Cotton Standards Agreement has been announced by the U. S. Department of Agriculture.

MERCHANDISING NOTES

Raeford Worsted Corp. is publicizing its "2/80s" wool-Dacron men's wear fabric by having a

plane write the name of the fabric in the skies over New York and Philadelphia.

Brentwood Sportswear is offering men's sweaters in a blend of Orlon and Coloray solution-dyed rayon staple.

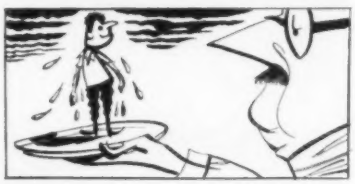
Burlington Hosiery Co. is marketing elasticized over-the-calf socks, made of Burmilized stretch nylon and called "Activ-8," designed to give men relief from leg fatigue.

Dan River Mills' sales promotion manager, A. W. Barber, told a recent meeting of a textile group that textile advertising and promo-

tion should above all else have an emotional appeal because women, the principal purchasers of textiles, can be reached much more easily by emotion than by reason.

Celanese Corp. of America is licensing its trademark "Celaire" to carpet manufacturers. The term identifies Celanese's twist-set acetate staple fibers for carpets, and its use requires that specified minimum standards of construction and performance be maintained.

U. S. Testing Co. has announced a plan for verification of wash and wear fabrics, based on an evalua-



tion procedure and standards developed by the company.

Chemstrand Corp. has launched a special trademark program, by which the designation "Acrilan Carpet" may be used where a minimum of 70 per cent of the carpet is Acrilan, and certain quality standards are maintained.

Dow Chemical Co. has announced that its acrylic alloy fiber, Zefran, will make its retail debut this fall in a small group of men's, women's, and children's clothing in luxury fabrics. The mills offering Zefran and Zefran blends include Worumbo, Warren, A. D. Ellis Cyril Johnson, Britton Fabrics, Talbott Knitting Mills, Crestwood Textiles, and William Heller.

New "Zip-Open" carton, developed for rapidly expanding self-service trade in textiles, is being used by Chester H. Roth Co. to merchandise its "Sheerlife" nylon hosiery. A tear strip down the back of the carton makes the package easy for the customer to open.

Lustron, Inc., is offering a line of nonwoven "barbecue cloths" made by Chicopee Mills of rayon staple. The cloths, in 36″ by 72″ size, retail for 69 cents.

Owens-Corning Fiberglas Corp. is doubling its fall consumer advertising budget for Fiberglas decorative fabrics after analyzing a U. S. Department of Agriculture consumer survey, which indicates a 450 per cent increased retail sales potential for glass fiber draperies.

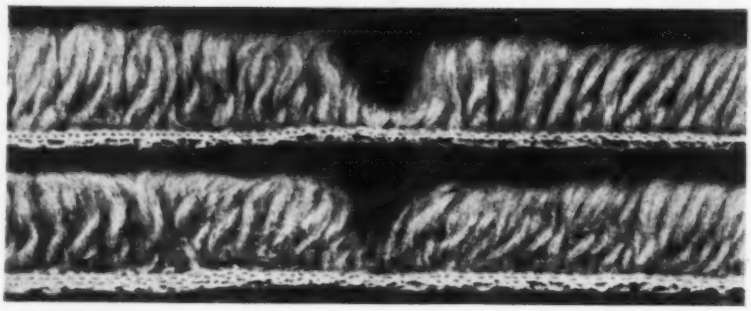
You can add years of wear

RISER STAIR EDGE TREAD

100% WOOL
at the **31,500** Pedestrian
Traffic mark.

80% WOOL/20% IRC NYLON
at the **98,000** Pedestrian
Traffic mark!

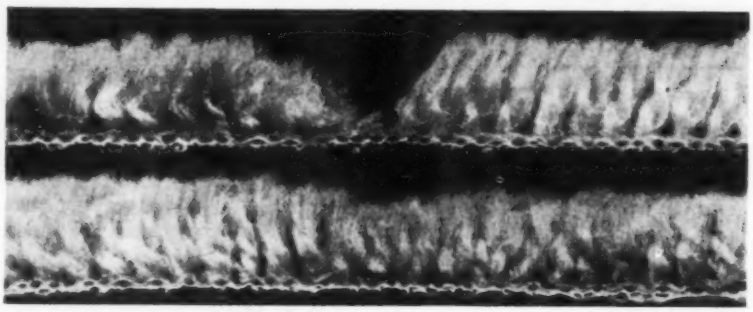
when 20% NYLON is added to wool



100% ACRYLIC FIBER
at the **72,000** Pedestrian
Traffic mark.

70% ACRYLIC FIBER/30% IRC NYLON
at the **72,000**
Pedestrian Traffic mark!

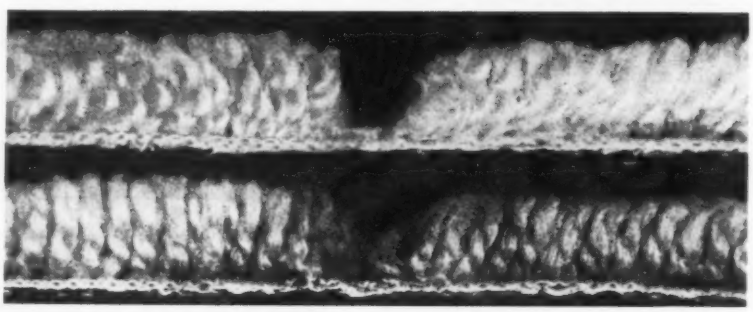
when 30% NYLON is added to acrylic fiber



100% RAYON
at the **8,000** Pedestrian
Traffic mark.

70% RAYON/30% IRC NYLON
at the **98,000** Pedestrian
Traffic mark!

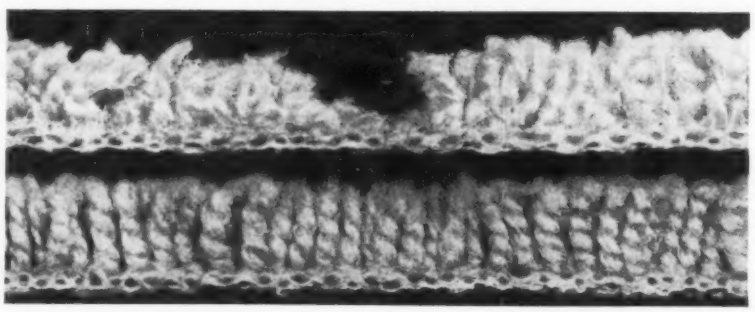
when 30% NYLON is added to rayon



100% ACETATE STAPLE
at the **51,000** Pedestrian
Traffic mark.

80% ACETATE/20% IRC NYLON
at the **65,000** Pedestrian
Traffic mark!

when 20% NYLON is added to acetate staple



to carpet made of any fiber

by blending it with

I·R·C NYLON

"How does it wear?" That's the question consumers are asking today when they buy carpeting. And here's visual proof that when you add nylon, you add long wear. Name your carpet fiber: wool, rayon, acetate, acrylic...you can improve them *all* by adding nylon. In blends, nylon adds miles of wear, years of life to carpeting made of every other fiber.

Nylon adds permanent texture and crush resistance, too. Nylon also adds *vitality* to colors—a sparkle and clarity that last the entire life of the carpet. Nylon is the fiber that adds all-around performance to carpeting.

THE NYLON FIBER DIVISION, INDUSTRIAL RAYON CORPORATION
500 Fifth Avenue, New York 36, N.Y. · 627 Guilford Building, Greensboro, North Carolina

THE NEW Nylon Staple I·R·C

Do not compare the four tests pictured here against each other. Compare only the 100% construction against the blend of the same fiber. Within each test, the 100% construction is identical to the blend in every respect but fiber content. These unpadded pieces of carpeting were laid on bare, rough steps for the toughest practical test.

Cost Conscious!
Here are some eye-openers on Slasher Operating Costs

Here are some actual carefully kept mill records — same mill — same styles. All equipment modern.

	Cocker 9 Cylinder Slasher	A leading American Hot Air Dryer	A leading Foreign Hot Air Dryer
Power Cost/M yds.	$ .066	$ .409	$ .415
Steam Cost/M yds.	.933	1.845	1.094
Total Cost/M yds.	$ .999	$2.254	$1.509
Cost Disadvantage	$ 0	$1.255	$ .510

WEAVE ROOM EFFICIENCY

The efficiency of Cocker beams in the weave room was slightly above that of hot air dryers.

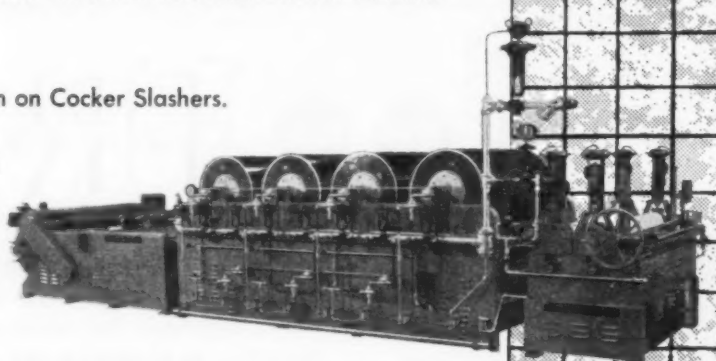
FINISHED CLOTH QUALITY

Cocker finished cloth quality was equal in all respects to that produced by any other slasher.

100 tooth ¾" pitch double sprocket and chain insure lowest maintenance expense.

Let us give you full information on Cocker Slashers.

In Canada and New England:
Contact W. S. Clark
Montreal, Canada
Melrose 1-3751



THE LEADER COCKER AROUND THE WORLD

Plant and Offices at Ranlo, N. C. (Mailing address, Gastonia, N. C.)

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Why do trained men leave the textile industry?

Is it top management's fault?

The following letter was received by TI's editors from a textile school graduate who has left the industry for another and completely unrelated field.

Without any judgment as to whether his letter outlines a legitimate complaint or is just a case of sour grapes, we present his letter as a firsthand opinion on one of the textile industry's problems.

Your comments are invited.

THE EDITORS:

This is an adieu to the textile industry. The writer has enjoyed a most inspiring relationship with T.I. in the past 11 years and feels that a word of explanation may be in order.

In recent years there has been much ado about what is wrong with the textile industry, and how to attract more young people to a textile career. Textile schools have made surveys among their graduates regarding their opinion on the quality of preparation received, etc., and larger textile firms have been offering many fine scholarships.

However, not enough has been said about the treatment by the industry of many a textile graduate with textile experience who has chosen textiles as his life's work. Here all the interest of the industry seems to come to a sudden halt although, in general, it goes on wondering on how to attract high school grads to textile schools.

The writer, holder of a Bachelor of Science Degree in Textile Engineering, plus a liberal arts degree, and who had made textiles a career by choice rather than by circumstances, started by working as a spare hand and next as a machine operator. He progressed to laboratory and office. Then he became a production manager—in capacity if not in title—and from there went to mill superintendency.

All this took about nine years and only three job changes. The first job—in 1949—paid $34.00 per 40-hr week. The final position—in 1958—paid $110.00 per 60-hr week. The rate per hour went from 85¢ for a new textile grad to an estimated $1.84 on the top spot for a textile grad with over eight years of textile experience.

NOW, to the best of my knowledge, there is perhaps no other industry that offers so much challenge. There are many chances for much inspiring human give and take. There are innumerable procedures and methods that need to be set up or improved. There are countless occasions where ways of doing a job better can be devised.

There is almost no limit in opportunities of expressing one's self in any creative undertaking from designing to the production planning of an order and the controlling of quality or flow of work from the floor. I think there is great satisfaction in contributing to the planning of a yarn or fabric one day, and the seeing of it being produced by thousands of yards the next day.

But a man, no matter how dedicated to his career, cannot live on challenge alone. He cannot do it if there seems to be no improvement in view financially, professionally, and when the long and heavy hours begin to tell on health.

To affect such an improvement and to prove one significant point, after exhausting all other known textile contacts, the writer and family left the textile industry in the midst of the current recession and found several openings. The accepted position is in the export department of a leading food manufacturing corporation. With no training in this field, the starting salary is twice as high per hour as on the last job. The work week is 37½ hours, and the work provides a real opportunity for further advancement.

NOW, what is wrong? To the best of his experience, the author

TO SOLVE YOUR FINISHING PROBLEMS YOU NEED BOTH...

TOP-QUALITY PRODUCTS

TOP-QUALITY SERVICE

The *successful* solution of a finishing problem always calls for two things: 1) Expert technical analysis; and 2) Products which meet the specific need with scientific precision. You get both from the Textile Finishes Department of Procter & Gamble. P&G offers you unsurpassed experience in solving finishing problems that require fatty based finishes and softeners, and in developing and manufacturing the needed soaps and detergents.

If you are interested in eliminating finishing difficulties and improving your processing and results, be sure to have the Procter & Gamble Textile Finishes experts evaluate your situation—without cost or obligation on your part. The data you receive will be based on *your* fabrics, *your* finishing procedures . . . and whatever other special materials or conditions are involved in *your* problems. And this expert analysis will be backed up by a specialized product or products selected from the many developed in the famous P&G laboratories.

For all the facts call the P&G Textile Representative nearest you. Or, if you prefer, write to Textile Finishes Section, Procter & Gamble, Industrial Specialty Sales Department, Cincinnati 1, Ohio.

New! PROXOFT-N

A remarkable new type of nonionic softener and lubricant. PROXOFT-N was developed by Procter & Gamble especially to give maximum stability with acids, salts and other trouble-making chemicals. It has the compatibility of the best nonionic agents and, at the same time, gives the desired lubricity and smooth, full-bodied softness which is characteristic of anionics. PROXOFT-N can be used advantageously on all types of natural and synthetic fibers.

PROCTER & GAMBLE

The **PROCTER & GAMBLE** Company • **TEXTILE FINISHES** Dept., Cincinnati 1, Ohio

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feels that what is wrong with the textile industry as a whole is its top management. Many an individual of top management teams lacks human qualities, such as understanding, consideration, humbleness, and perspicacity. In their stead the courage of ignorance, the implementation of strictly empirical decisions, and sacrifices to expediency are some of the failings that are more than permitted.

Rigidity of mind and resistance to change are considered assets. The one great fixed idea that seems to prevail is that the only and one way to do business and compete favorably is to cut corners, to cut costs, and to cut the other fellow's throat. There is a definite tendency to bring man and machine to a common denominator and to destroy his pride in workmanship.

What is achieved is the claim that a product is in close competition with cheap Japanese or other cheap imports, and the accompanying clamor by labor for higher wages to go with higher productivity.

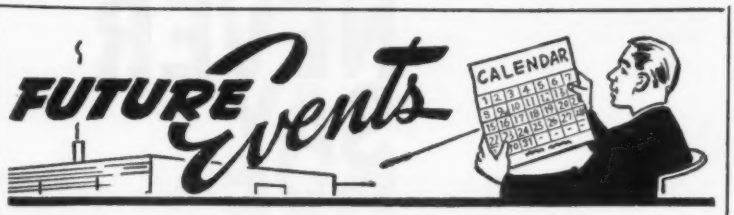
An industry which is equipped to, but doesn't, come up with products of superior quality, with new fabrics for new purposes, with new fabrics for old needs, has missed its boat. And until this morbid preoccupation with cheapness is changed, the boat in this buyer's market shall not be caught again further up the river.

In short, a younger and more progressive attitude is needed. As long as top managements do not realize it or do not change, the industry will coast along, losing its young men to other industries and wondering about how to attract new blood without trying to use the talents available.

I have been trained in textiles and it hurts to change to a new field. Maybe some day our industry will attract back the men it has lost.

In the meantime, may I keep receiving my copies of T.I.?

(Name Withheld)



Date	Event	Location
Aug. 18-22	Massachusetts Institute of Technology course on Techniques of Textile Research	M.I.T. Cambridge, Mass.
25-29	M.I.T. Summer Course on The Mechanics of Textile Structures	M.I.T. Cambridge, Mass.
Sept. 9-10	The Fiber Society	Montreal, Que.
11-12	Combed Yarn Spinners Association annual meet	The Cloister Sea Island, Ga.
12	Delaware Valley Section AATCC	Wilmington, Del.
12	Northern New England Section AATCC outing	Wachusett Country Club West Boylston, Mass.
13	South Central Section AATCC	Hotel Patten Chattanooga, Tenn.
13	Southeastern Section AATCC	Ida Cason Gardens Chipley, Ga.
19-20	Piedmont Section AATCC	Hotel Charlotte Charlotte, N. C.
25-26	Northern Textile Association	Wentworth-by-the-Sea Portsmouth, N. H.
25-26	Textile Quality Control Association	Grove Park Inn Asheville, N. C.
26	Niagara Frontier Section AATCC	Niagara Falls, Ont., Can.
26	Rhode Island Section AATCC	Warwick Country Club Warwick, R. I.
26	Western New England Section AATCC	Hartford, Conn.
Oct. 1-2	Chemical Finishing Conference	Washington, D. C.
6-10	Southern Textile Exposition	Greenville, S. C.
9-10	North Carolina Textile Manufacturers Association annual meeting	Carolina Hotel Pinehurst, N. C.
10	Southern Textile Overseers Association	Greenville, S. C.
11	Textile Operating Executives of Georgia slashing and weaving discussion; 9:00 A.M.	Georgia Tech Atlanta, Ga.
13-16	National Industrial Packaging, Handling, and Shipping Show	The Coliseum Chicago, Ill.
14-17	A.S.T.M. Committee D-13 fall meeting	Sheraton-McAlpin Hotel New York, N. Y.
15-25	International Textile Machinery Exhibition	Belle Vue Manchester, England
23-24	Southern Textile Methods & Standards Association	Clemson House Clemson, S. C.
25	Alabama Textile Operating Executives carding and spinning discussion, 9:30 A.M.	Thach Auditorium Auburn, Ala.
28-31	Carded Yarn Association annual meeting	The Homestead Hot Springs, Va.
Oct. 30-Nov. 1	AATCC National Convention	Hotel Conrad Hilton Chicago, Ill.
Nov. 7-8	Textile Seminar sponsored by University of Georgia division of clothing and textiles in extension, teaching, and research	Georgia Center for Continuing Education Athens, Ga.
17-19	Narrow Fabrics Institute annual meeting	Hotel Roosevelt New York City

NEVER SAY DYE

SAY BLEND WITH COURTAULDS COLORAY®

TO COLOR DACRON* FABRIC a better way, there's Courtaulds' super-fast color fiber Coloray. You skip the whole dyeing process that takes time and gives trouble. Because color's right inside Coloray fiber, and can't get out! It's deeper, richer color than any ordinary dye can give. And it delivers the topnotch colorfastness you must have, particularly in wash-and-wear. With Dacron or any synthetic, with cotton or any natural fiber, Courtaulds Coloray improves the blend all around! Enriches hand. Promotes yarn evenness for finer appearance. Builds in absorbency for more comfort and static-free quality to repel lint, dust and dirt. Think about it! Then go along with the growing trend to blend with Coloray.

*DuPont's polyester fiber

COURTAULDS COLORAY®

Solution-dyed rayon fiber with Captive Color..."Can't Escape!"

For further information on new fabric development and Coloray blends now available, write
COURTAULDS (ALABAMA) INC., *first name in man-made fiber, first name in solution-dyeing*, 600 Fifth Ave., New York 20 • Greensboro, N.C. • LeMoyne Plant, Mobile, Alabama

Textile Industries

FOR JULY 1958

Machinery layouts help supervisors

in making job assignments and discussing machinery or job modifications

by C. H. Ashton
Exclusive

OUR MILL uses a layout of the machinery in the spinning room to great advantage in assigning spinners, cleaners, and other operatives to their jobs

We find these layout forms practically indispensable. Besides using them for assigning jobs, contemplated machinery or job modifications can be intelligently discussed in conferences, with the machinery plan there for all to see. Furthermore, there is no delay or confusion at shift changing time, and operatives go promptly to their assignments as indicated on the layouts.

The cost of preparing the original drawing and the cost of the first master are quickly absorbed in having such a convenient and efficient system of assigning jobs with a minimum of confusion and delay.

When we started the system, a layout of the spinning room was prepared, with an impression of this layout made on a duplicating machine master plate so that addi-

Figure 1. Spinning room layout, showing warp spinners' assignments. Yarn number being spun is listed on each frame. The percentage figures refer to a full job load. The mill technical department has the responsibility for making spinners' job assignments every 24 hours.

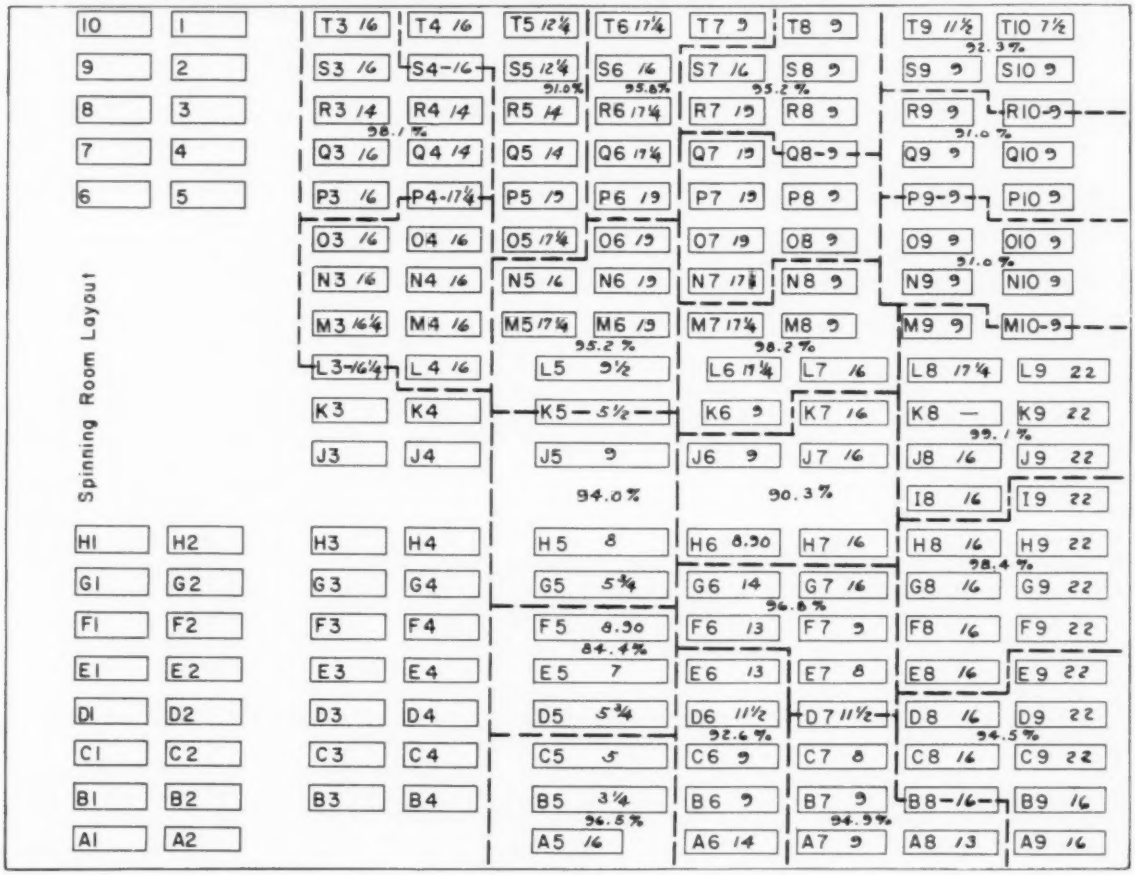
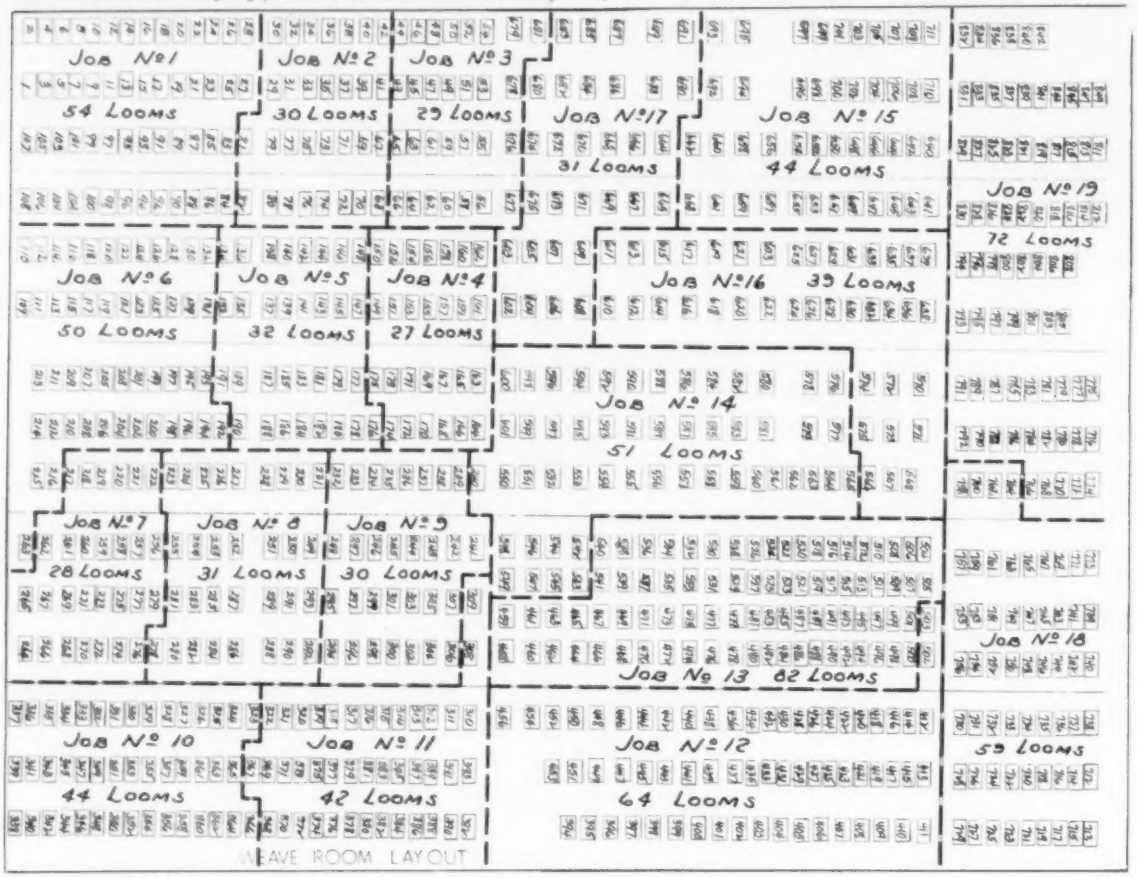


Figure 2. Weave-room layout, showing battery job assignments. This form is also used for assigning jobs to weavers, cloth doffers, filling lay-up operatives, and quill take-up men. Battery jobs are assigned weekly, and each battery hand receives a cutout of her looms.



tional 8½" x 11" forms could be quickly and conveniently printed.

The layout is approximately to scale, with rectangular blocks representing each frame in the spinning room. The blocks are numbered according to actual frame numbers.

The technical department in the mill is responsible for the assignment of spinners' jobs, which is done once every 24 hours. Yarn numbers on frames are listed in the corresponding blocks on the spinning room layout.

From prepared charts, the per cent job for one side for each particular number is determined. Then the spinners' jobs are blocked off in sections as near to 100% of a job as possible. An example of a typical assignment for warp spinners is given in *Figure 1.*

A copy of this layout is sent to the spinning room office. A second hand takes this sheet and marks his frames before shift changing time so that there is no delay or confusion and spinners go promptly to their assignments.

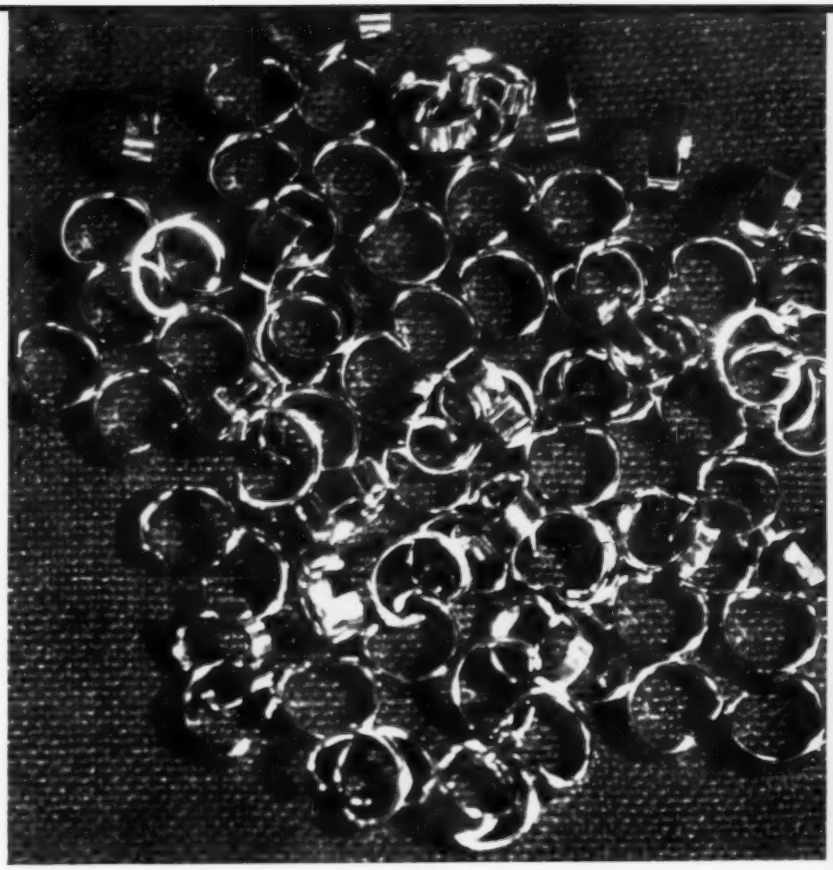
The percentage of a job shown for each spinner helps the spinning room supervisors know exactly what each spinner's job load is. He has actual percentages to answer any complaints or questions which may come up from his employees.

Weave Room. The layout of the looms in the weave room is not as nearly to scale as the one in the spinning room, since there are five times more rectangular blocks to be fitted onto an 8½" x 11" sheet. This layout is used more extensively in the weave room than in the spinning room, since cloth doffers, filling lay-up operatives, quill take-up men, battery hands, weavers, etc., are assigned using this form.

A duplicating master is prepared as with the spinning room layout, except that preprinted masters are also made. In other words, the layout of looms is imposed on a master sheet so that lines indicating job boundaries can be drawn on this master, then duplicated with the layout of looms and job boundaries printed on the completed form at one time.

The technical department reassigns battery jobs once weekly. As in assigning spinners, battery jobs are laid out as near to 100% as possible and blocked off on a preprinted master, showing the job number and the number of looms assigned. Copies of this layout with jobs marked off are printed and distributed to the weave room. A sample is shown in *Figure 2.*

On the first day of a change in battery-hand assignments, the battery hand is given a cutout of her looms. A copy of the assignments with each battery hand's name is posted in the weave room office for each shift.



New type travelers run 19.5 days longer

in this cotton system mill processing synthetic blends

Once the travelers were changed twice per 24 hours; now they run for four weeks

Staff prepared Exclusive

A TOTAL of 11,144 spindles equipped with a new type of traveler have produced excellent results in about one year of service at Erlanger Mills, Lexington, N. C. Called the "Supreme Traveler*," the units have been used on 44 frames of 276 spindles each, producing 12s to 20s rayon blends, filling and warp.

Traveler numbers 5, 6, and 7 have run a minimum of four weeks; travelers formerly used were changed approximately twice in 24 hours on a critical blend. The change intervals were established on a basis of yarn quality checked in the laboratory and without taking into account the actual wear life of the traveler.

Although the new type travelers cost about three times as much as ordinary ones, the extended running interval more than justifies the added expense.

Other advantages of the special travelers enumerated by officials at Erlanger take into account that no rust problem has been encountered to date, and high humidity has had little effect on the finish. Also, any travelers the traveler changer might have left in his hand after changing a frame may be put back into the can without creating a rust problem.

There is less down time attributable to changing travelers, and the labor cost in making the changes has been reduced approximately 50%. Thus, a considerable labor saving is effected while reducing damaged yarn which sometimes occurs when changing travelers.

The mill may carry a smaller inventory of travelers because of the fact that fewer travelers are actually needed in view of the extended change interval.

Less tangled yarn in spooling is partially attributed to making fewer traveler changes, as is less sloughing on quills in weaving.

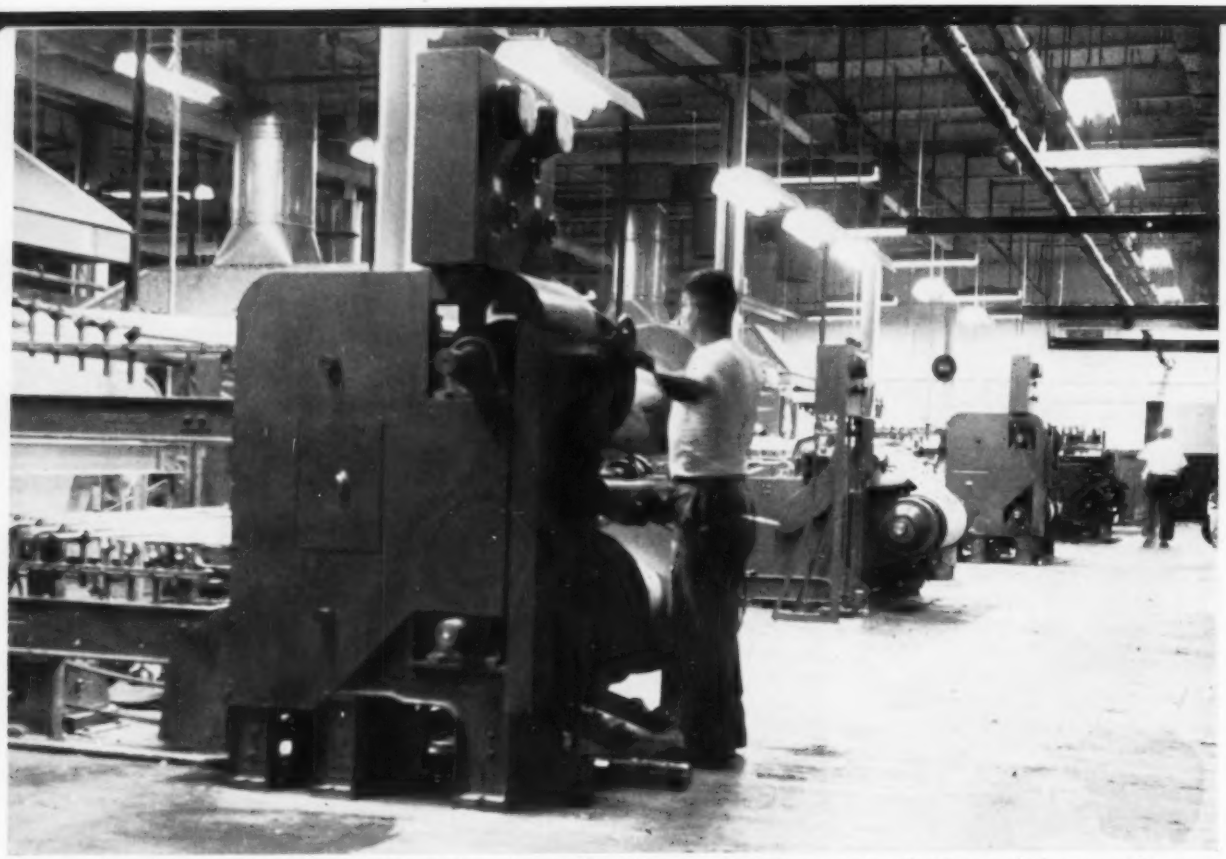
Ends down per thousand spindle hours have remained the same at 20-30, and quality is maintained at the high level customary at Erlanger. However, the break factor showed an improvement of 40 points which is attributed to the new travelers.

Traveler numbers 3, 5, 7, and 8 have been run with number 2 flange and number 2 circle with good results in this instance. A special finish on the travelers has eliminated traveler loading. The loading is actually an accumulation of short fibers which sometimes get off into the yarn. A number 3 traveler with an A-1 circle has been used with a number 2 flange for nine weeks on 20s rayon without a change.

Cloth made of yarn spun with the special travelers was checked separately all the way through every process and looked well in the finished product.

A blend containing 50% acetate and 50% viscose was spun using a number 3 traveler; however, many kinds of synthetic blends and fibers including Orlon, Dacron, viscose, and acetate have been tried with unusual results using these new type travelers. Some typical blends are: 90% viscose, 10% acetate; 70% viscose, 30% acetate, and these are blended at opening.

*Carter Traveler Co.



Formerly seven slashers were required to do the work now performed by these three. Two are equipped with nine cylinders, one with seven.

Dundee's new multi-cylinder slashers eliminated a production bottleneck. There's

no more waiting for warps!

Staff prepared Exclusive

THREE SLASHERS at the No. 1 plant of Dundee Mills, Griffin, Ga., are slashing more warps per day than did the seven two-cylinder ones formerly used there. Made by West Point (Ga.) Foundry and Machine Co., the slashers are treating some of Dundee's warps at a speed of 120 yards per minute.

At that high speed the slashers require 15 to 20 seconds to decelerate after the SLOW or STOP button is pressed. The mill, to adjust for this, has rigged a cut marker with a warning system which sounds a bell at the front of the slasher each time the cut marker flips to mark the warp.

Typical Warps Produced

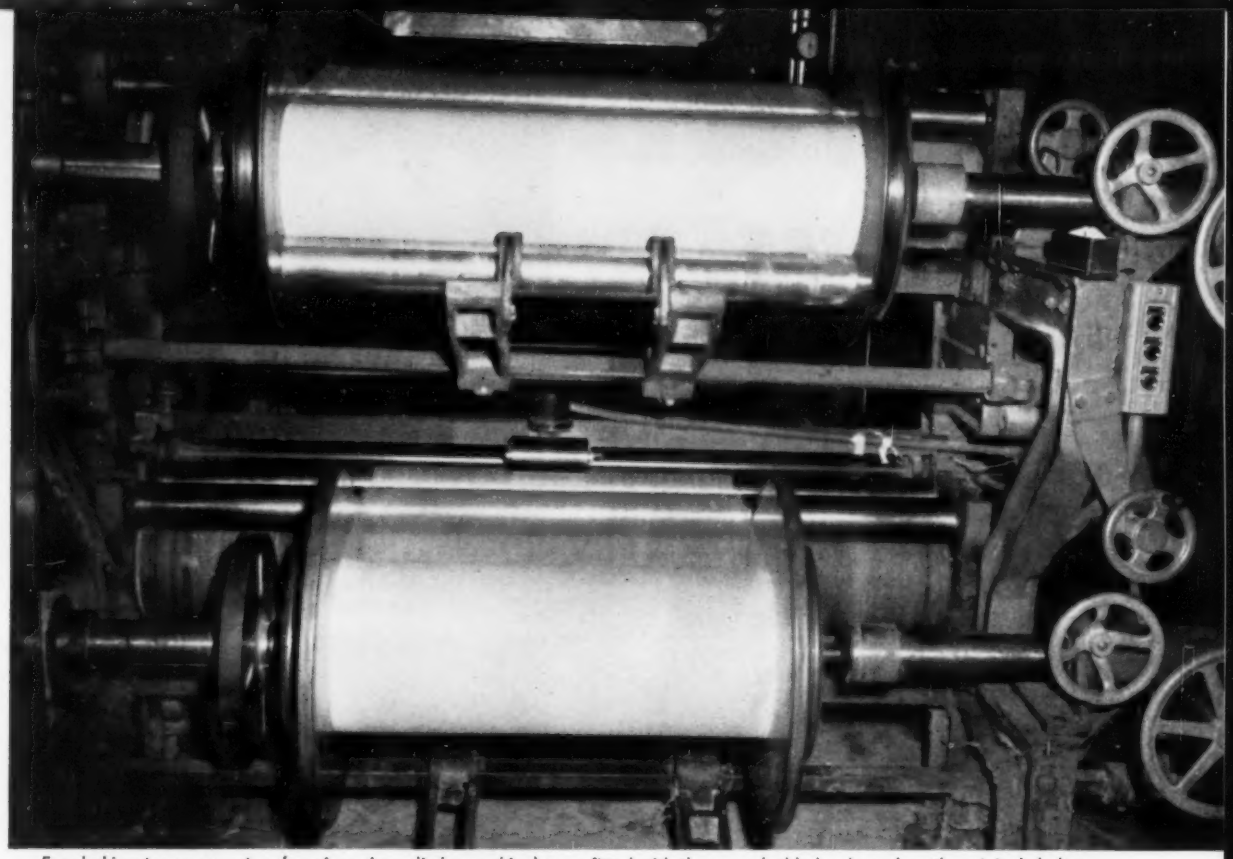
No. Ends	Pickup (%)	Yarn count	Pounds per hour	Yards per minute
1498	3.5	16s	802	120
2248	3.5	16s	1100	110
2012	10.0	12s	1042	87
3420	8.0	30s	911	112

When the bell sounds, the tender presses the SLOW button. By the time the mark threads around the cylinders and emerges at the front, the slasher has lost enough speed to allow it to be stopped at the proper point for doffing.

Both acceleration and deceleration of the slashers' multimotor drives are controlled automatically, and the time of acceleration or deceleration may be varied. The electrical controls prohibit abrupt stops.

Magazine creels, mounted on ball-bearing wheels for side-to-side movement, permit the slashers to be loaded and threaded with a minimum of lost time.

As a result of the new installa-



For slashing terry warps, two (one is a nine-cylinder machine) were fitted with the same double heads used on the original slashers.

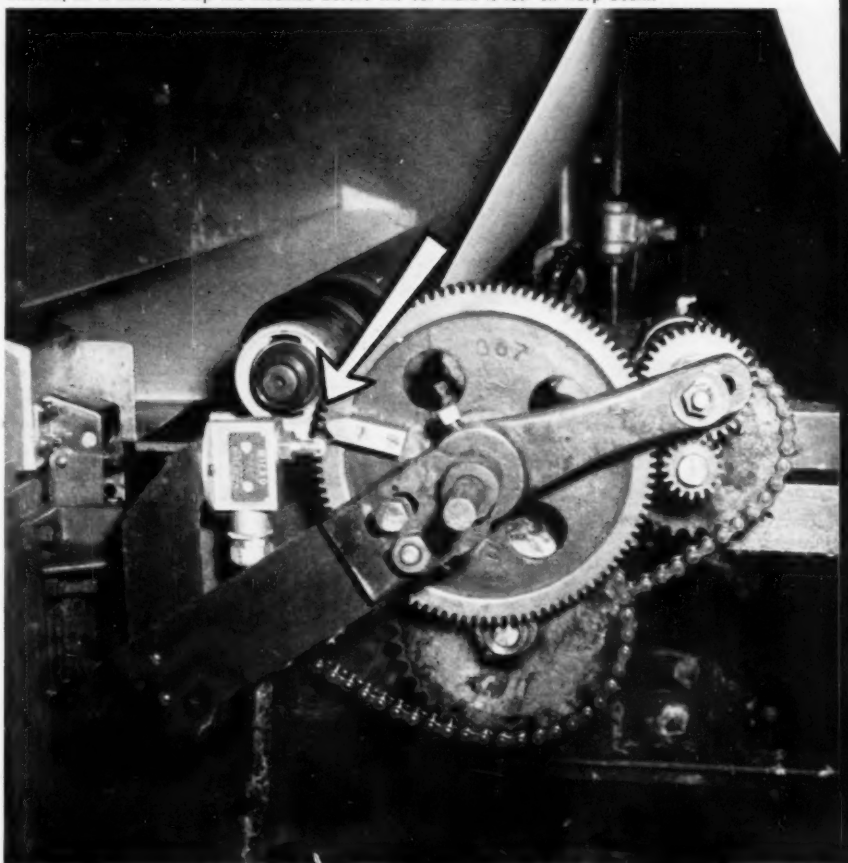
tion, Dundee management reports, there has been a general improvement in warp quality, a 20 per cent increase in yarn per warp beam, and a reduction in size pickup variation.

To meet the varied weaving requirements of plant No. 1, the firm installed two nine-cylinder and one seven-cylinder machines. To further fit them to the plant economy the firm equipped the seven-cylinder machine and one of the nine-cylinder slashers with the double heads used on the original slashers. These prepare terry warps.

Size temperature, cylinder pressure, and size level are maintained automatically. A slight temperature differential is kept between the stored size (195 F) and the size box (200 F).

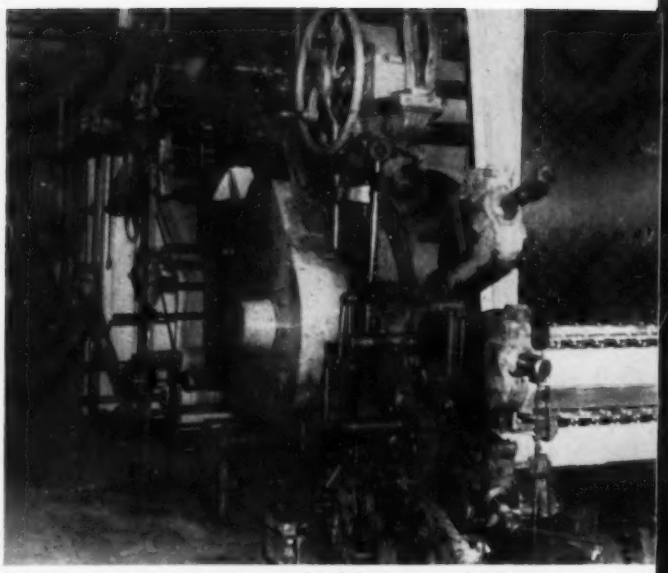
The cylinder steam load, now maintained at 35 psi, can be varied at will, and can be further varied between cylinders. The nine-cylinder machines have cylinder temperature controls which permit five cylinders to be maintained at one temperature and four cylinders at another. The equivalent division on the seven-cylinder slasher is four and three.

With high slashing speeds requiring 15 to 20 seconds stopping time (built-in controls prevent abrupt stops), the cut marker is rigged with a switch (arrow) to sound an alarm bell giving the operator warning that a cut mark is on the way through the cylinders. Thus alerted, he is able to stop the machine before the cut mark is lost on warp beam.

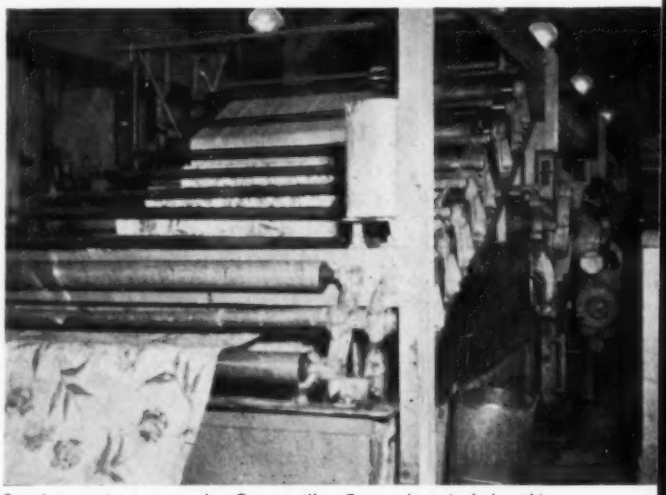


PRINT WORKS THRIVES ON DIVERSITY

Bruck Mills use a variety of color classes and printing systems on natural and synthetic fibers and blends



Eight-color printing machine, equipped with back-grey washer, is one of four similarly equipped, offering range of two to twelve colors.



Soaping equipment at the Cowansville, Que., plant includes this open soaper; there is also a rope soaper for more thorough soaping.

In the engraving department, the pattern is transferred from the zinc plate to the copper roll by the pantograph engraving machine.

Staff prepared—Exclusive

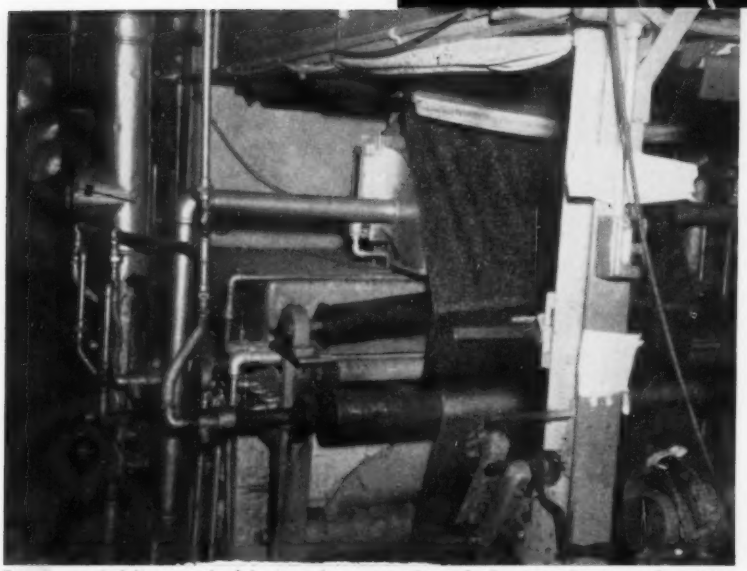
TO MEET changing trends in print styling and stay abreast of printing developments, Bruck Mills, Ltd., has continually added to its facilities to achieve a healthy state of diversification. Fabrics of almost unlimited range are roller and screen printed —from draperies and tablecloths to dresswear and blouses.

Printing equipment and facilities include four roller printing machines, two specialty printing machines (for lacquer and chenille work), screen printing tables, three types of agers, a curing unit for emulsion pigments, open and rope soaping equipment, and an engraving department for photo and pantograph engraving.

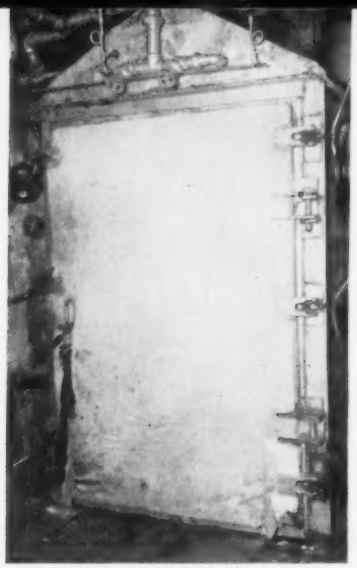
To print the wide variety of fabrics and blends, nylon and nylon mixtures, rayon and rayon/cotton, linen, cotton and acetate, and silk and silk/rayon, to mention some, many color classes are required. Besides the popular emulsion pigment printing systems (both oil-in-water and water-in-oil) and its own formulations, Bruck uses vats, acetates, directs, and acids in large quantities.

Much of Bruck Mills' synthetic grey goods for printing comes from its own mills; either from the Cowansville, Quebec, plant, where the print works is located, or from its nearby Sherbrooke plant. But since Bruck Mills are commission dyers and printers as well, many of the fabrics, such as tricot fabrics, corduroys, and staple cottons are supplied by the converter.

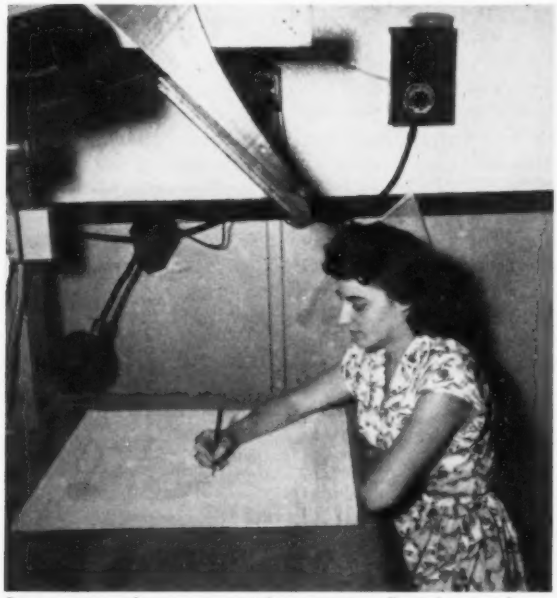
The photographs on these pages provide a cross sectional view of Bruck Mills' printing equipment and facilities. Not shown are the equally diversified facilities for dyeing and finishing of this same wide range of fabrics.



Entering and delivery end of horizontal ager, used mostly for vats, directs, and acetates. There is also curing unit used when fabric is printed exclusively with emulsion pigments.



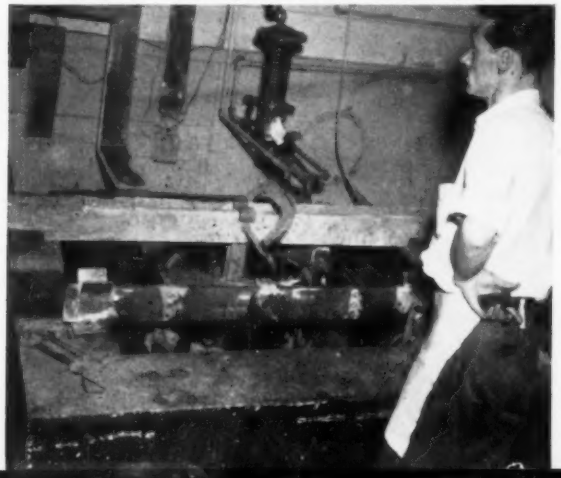
Cottage steamer achieves higher yield than regular equipment with certain color classes.



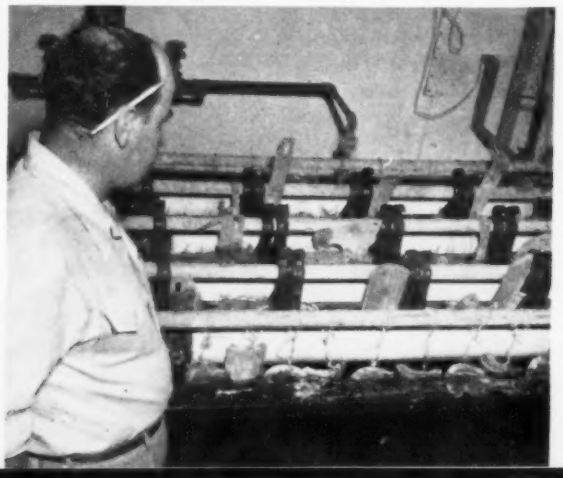
Print pattern, drawn on special paper, is reflected to scale on zinc plate, pattern details are traced with diamond-pointed pencil.

The copper roll is turned down and then hand polished to the proper size before transfer of the pattern by pantograph engraving method.

The engraved copper roll acquires a tough outer surface of a chromium compound in the electrolytic cell shown in the photograph below.



Worn-out or obsolete rolls have chrome plating removed, are turned down, then are built up to size in acidic copper sulfate solution.



SIMPLE QUALITY CONTROL

Here are the tests considered essential for an all-cotton mill quality control program

Cotton fineness and maturity are closely related. Two technicians check for fineness and prepare to give the tested samples a differential dye test for maturity.

by Jim Wheeler
Canton Cotton Mills

Exclusive

MY VERSION of simple quality control in an all-cotton mill is this outline of the various tests I feel are important in a simple control program. This outline is based on experience but does not necessarily reflect my firm's present program. We change the program periodically to obtain needed information.

The control program should begin with the cotton. Through a series of elimination tests it is possible to find out just what cotton properties most vitally affect the end product. When this information is known one can begin to see what localities produce the type cotton needed and to work with the shippers to provide this type.

Cotton. The fiber is tested to determine its fineness, maturity, strength, length, uniformity, and foreign matter.

Through the use of modern testing devices the fineness of cotton is established in a relatively simple test—it is possible that each bale received by a mill may be so tested. A sample is obtained from both sides of each bale and a composite sample checked for fiber fineness.

The fiber fineness affects processing in many ways — yarn strength, waste, neps, ends down at spinning, cloth shade, beaming time, etc. By trial runs it is possible to obtain information on just what fineness range best suits the particular product and process. In some cases, even within one mill, it is possible to run several different fineness mixes, each mix going into a particular product or type yarn.

Once all of this information is compiled on what is needed for various styles and mixes, it is only a matter of testing the cotton and seeing that it is properly blended into mixes in the mill. Of course, one will also have to keep a close observation on the product to make sure nothing gets out of hand.

The maturity of the cotton is closely related to its fineness. There are exceptions when a bale which might meet fineness requirements would be immature, and vice versa. Maturity affects the affinity cotton holds for dyestuffs and other general qualities mentioned above for fineness.

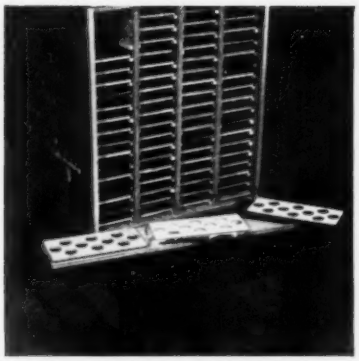
By using the differential dye test it is possible to check several hundred bales a day for maturity, and by trial runs one can establish just how low on maturity one can go without affecting the product. Once this information is known and one builds up experience on evaluating samples, the control program becomes routine. Bales which do not meet fineness and maturity requirements can sometimes be used in certain fabrics where fineness and maturity are not great factors.

The tensile strength of cotton is also important. The method of testing for tensile strength, however, is slower. Therefore, the samples are checked on a spot basis. It is good to test individual bales from various localities to see how the cotton is being received and what varieties and localities produce the strongest cotton.

More actual information can be obtained from composite samples, such as blended bales, picker laps, or drawing sliver. These composite samples give one more information on what he is processing as far as strength is concerned. The incoming bales tested can be used in getting more cotton from localities and varieties which are stronger.

The staple length is also important. All cotton is bought, of course, with a designated staple length. However, I am sure it is generally accepted that this staple length varies. Some crop seasons seem to be on the short side while others are on the long side.

The important tensile strength of the cotton is tested through a rather slow process. These technicians are using the inclined-plane method to determine tenacity.



Technicians wheel this portable file through card room and collect up to 50 web samples at a time. Note templates.

For uniform running in the mill it is highly important that the superintendent know exactly what staple length is being processed. The test for length is slow compared to the number of bales being processed in an average mill. Therefore, this test must be done on a spot check basis or composite samples from various stages of processing.

The per cent uniformity of the staple length is a figure which one gets with the standard length test. The per cent uniformity means the number of fibers close to the staple length. Therefore, the higher this figure, the greater the concentration of fibers around the staple length.

Even though, from our experience, most cottons have a good per cent uniformity, should this per cent be low, the ends down, breaking strength, etc., will be affected in proportion. This indicates that a control is needed on length and uniformity to maintain smooth operation in the plants.

The Shirley Analyzer test is designed to give the per cent foreign matter or trash content in a sample of cotton, waste, etc. There are some figures on the amount of waste for various cotton grades that can be used as a guide in testing incoming cotton to see that the per cent foreign matter is in line for the grade cotton purchased. This type testing is important as a control of the amount of foreign matter in the cotton as it is received.

This machine can also be utilized to a good advantage by checking waste from various beaters, etc., to see (1) that the operation is doing a good job of cleaning, and (2) that one is not losing too much fiber as the foreign matter is removed.

Periodic picker waste tests are important in controlling the amount of foreign matter and fiber removed. The rule of the thumb percentages are 75 per cent foreign matter and 25 per cent fiber in picker waste. This information may be used to set up the minimum beatings required for the maximum cleaning.

Process Testing. Picker lap uniformity is of great importance. It is obvious that unless one starts with a good lap, its bad effects cannot be corrected in later processes. For good control, one lap from each picker should be tested by the control laboratory each week.

It is also a good idea to have the lap meter located in the picker room with one person designated to make "on the spot" tests. This affords the picker fixer an opportunity to keep his pickers producing uniform laps at all times.

Card sliver can be control tested for size and per cent non-uniformity. The non-uniformity test can be run on an electronic uniformity analyzer. The amount of testing on card sliver certainly would vary between plants producing a range of fabrics. Usually it is better to concentrate one's uniformity work on the drawing sliver.

Nep counts are important where neps are a factor in the fabric being produced. A comparatively simple way to make nep counts at the card web is to have a board (approximately the width of the card web at the doffer comb) designed to hold three smaller boards covered with black suede leather.

A card is stopped, the board placed under the web just back of the doffer comb and tilted upward to break the web. A template is then placed over each of the three boards, each template having ten holes with an area of a square inch each. Thus, 30 square inches of web are tested from each card.

These boards can then be removed from the holder and placed in a large box on wheels to be counted later. A box not too large in size or too hard to handle will hold enough boards to make nep counts on 50 cards at a time. These counts are usually made at the half-way point of the stripping cycle.

By having a close control on the neps at the card web, it is possible to know before the yarn gets in the cloth when the neps are higher than a predetermined standard. When these counts do run higher than the standard, the reason should be checked into immediately. The cotton mix, or the method of processing prior to the cards

Determining if the quantity of foreign matter in a sample of cotton is normal.

A sample of cotton is being inserted in the clamps of tensile strength tester.

should be examined. Usually the reason can be found without too much trouble.

The drawing sliver can be tested for uniformity and size. Of course, various mills would need various programs of control, but it would be well to cover the uniformity of each delivery on each frame at least once per quarter. One way of reporting the results is to test all deliveries of either warp or filling at one time. A grand average can be calculated and all deliveries appearing above this average can be reported in red.

Usually when a few deliveries are in the red the entire frame will be in the red. Through the superintendent and overseer, the fixer checks these frames and keeps a record of what is found to be wrong. Usually a follow-up test is advisable on frames corrected to see what has been accomplished.

The control tests of the roving frames are the size test, non-uniformity test, and ends down. Of course, the size test is conducted daily on each shift. Periodic tests are made for non-uniformity and also on special samples that are being run. The routine ends down tests are necessary for the information these types of tests give.

Yarn control tests are the routine size and breaking strength, ends down test, and periodic non-uniformity tests. Our most effective plan for checking non-uniformity of yarn is to take a representative number, say 1,000 deliveries, and test each of these for non-uniformity. This can be accomplished by sampling 100 deliveries or one side of a frame on the first doff in the morning, to be tested during the day on the analyzer with the instruction that the fixer do nothing to that frame for the period of the test.

Upon completion of the test, each delivery appearing above the average can be checked by the fixer and a record made of what was found wrong with each delivery. The follow-up test is advisable immediately to see what progress has been accomplished. This procedure can be continued until the 1,000-spindle total has been tested.

The information from this test can be compiled, showing by percentage the defects found which accounted for the higher per cent non-uniformity. The information from the 1,000-spindle test can then be used to check the balance of the spinning room for the defects found.

Slasher yarn can be control tested for moisture content and non-fibrous content. The moisture content test should be checked on slasher yarn as often as possible, certainly as much as once per week. The non-fibrous test does not need to be made that often, but it should be checked periodically or with any formula change or machine change.

The weaving control test is usually confined to loom stop tests. Each stand of looms should be studied at least once each quarter and a summary report made of these tests. Other control testing in the weaving that usually gives good information is to concentrate on a particular type defect which accounts for a high percentage of seconds.

By dividing the room up between several persons making the test, and asking each weaver to notify this person when a defect of this type shows up, one can immediately go to that loom, record the loom number, the reason for the defect, and the extent of the defect. This defect can even be marked on the cloth and later followed up in the cloth room.

This test can be run over a period of several days if necessary to compile the information that gives the exact reasons for a particular type of defect. Whatever action necessary can then be taken in an attempt to reduce the cause of the defect.

Routine control tests on cloth are breaking strength, non-fibrous test, abrasion, width, ends, picks, shrinkage wash test, colorfastness to laundering and to light, weight, and general inspection. The amount of testing necessary for each of these is governed by the type product being produced and the necessity of such tests. Standards for each of the tests on cloth are set up and a control test conducted to insure that the fabric meets the standards.

Copies of all tests made should be written in detail and given to each person interested in such tests. It is advisable to have periodic meetings to discuss the results of these tests so that a mutual understanding by all personnel involved can be had. Each person from top management down through the individual employee plays his part in the controlling of quality. Follow-up work is very important and should be so designed that any process out of control will be adjusted as soon as possible.

The above outlined program can certainly be improved upon, but in our experience this type of simple testing at the various processes has supplied information needed in better controlling the quality of the end product.

If you have a union, check these

Do's and Don'ts in arbitration

by Robert I. Weil*
Personnel manager
Puritan Sportswear Corp.

Exclusive

ARBITRATOR'S decisions are not based on equity and contract language alone. Many other factors contribute to winning —or losing—a case. In fact, the basis for losing an arbitration may be laid long before the actual grievance to be arbitrated arises.

The Collective Bargaining Agreement. According to estimates of the U. S. Bureau of Labor Statistics, about 97% of labor-management agreements in the United States contain an arbitration provision as the terminus of the grievance procedure. The arbitration clause represents the first step toward reaching a just decision. In order to serve its purpose, this provision of the agreement must be complete and effective.

First of all, the arbitration clause defines the basic authority of the arbitrator. In one recent case, a company had consistently violated the job classification system, which was a part of its agreement with a union. However, the arbitration clause specifically excluded controversies regarding job classification and assignments. The arbitrator was forced to rule the issue nonarbitrable.

The ball can bounce both ways though. In another recent case, the arbitration clause was all-inclusive, and the agreement made overtime voluntary. The company had subcontracted several thousand dollars worth of die jobs, despite a contract clause making this a matter of company-union agreement. The company claimed that it could not have completed the dies in its own shop, which was working full-time, but not overtime. The arbitrator required the company to pay substantial sums to employees for lost overtime, which might have been refused by them if offered. In writing an arbitration clause, therefore, the parties should carefully consider which issues they desire to make arbitrable.

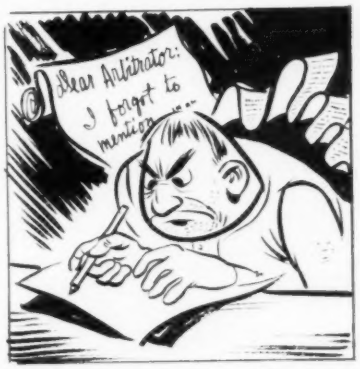
The procedural portion of the arbitration clause is another vital area. There are several organizations in the United States which assist parties to select arbitrators qualified not only by their impartiality, but also by their knowledge and experience in the field of labor-management relations. The American Arbitration Association and the Federal Mediation and Conciliation Service, as well as the mediation services of a number of states, maintain extensive panels of experienced labor arbitrators, which are available to the parties on application.

Unfortunately, many arbitration clauses fail to take advantage of the panels maintained by these "expert" agencies, and turn instead to public officials, law courts, clergymen, and other well-meaning but incompetent organizations or persons for the appointment of arbitrators. Arbitrators appointed by such sources may be the same persons found on the panels of the "expert" organizations, or they may qualify only in the sense of impartiality, lacking totally the experience and judgment required of labor arbitrators.

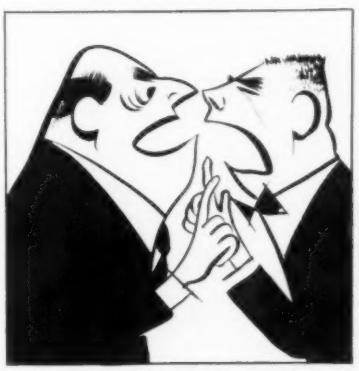
The arbitration of labor disputes is a business for experts. Amateurs can do inestimable harm to the relationship between the parties. Therefore, in this sense both parties to a dispute can lose a case long before it arises.

The Grievance Procedure. Most collective bargaining agreements require that grievances be discussed in various "steps" prior to reaching arbitration. This is a device employed by the parties to attempt settlement of differences, and that purpose is the primary one. Labor and management must

Arbitration is a business for experts, not for well-meaning but incompetent amateurs.



A grievance often can not be altered or enlarged once it has been submitted in writing.


Loudness and abuse never won an arbitration case. They often hurt the offender's case.

*Former staff member of the American Arbitration Association.

honestly attempt to reach agreement during the steps of the grievance procedure. During one of the early steps, the grievance or dispute is normally reduced to writing by the union, and as the grievance proceeds through the various levels, both management and union attempt to clarify and crystalize their positions—in writing as well as discussion. This is where serious errors of omission may occur that later jeopardize the position of one of the parties in arbitration.

For example, the union, in reducing the grievance to writing, may omit a portion of its claim. If the grievance is not subsequently enlarged as it goes through the grievance machinery, it may not be altered in arbitration. And many agreements rightly do not permit alteration or enlargement of a grievance once it is submitted in writing. To enlarge a grievance once it has reached the arbitration stage, would be, in effect, to ignore the previous steps of the procedure. This would violate the terms and spirit of that portion of the agreement because the parties would not have had an opportunity to bargain about all aspects of the dispute. This points up the importance of training union stewards and line foremen in grievance procedures. In most instances it is they who first put a grievance into writing.

Conversely, management too must lay all its cards on the bargaining table during the grievance process. In a recent arbitration case, management had discharged a man for theft. The case was processed through the grievance machinery on that basis. The alleged theft was a difficult thing to prove, since there was only circumstantial evidence. When the discharge went to arbitration the company charged the employee with inefficiency as well as theft, and inefficiency was an easy charge to prove in this instance.

The union argued that if the company had claimed inefficiency at the beginning, the case might not have gone to arbitration. Since the union, in good faith, had processed the discharge in the light of the accusation of theft, it refused to defend against inefficiency in the arbitration stage. The arbitrator was left no alternative but to uphold the union's contentions.

The Submission. Once an issue has passed through the grievance machinery it may be submitted by one or both parties to arbitration, depending upon the terms of the agreement. The instrument used in this process is titled the "submission," or "demand" if unilaterally initiated. To quote one authority on the subject:*

> The arbitrator learns what is expected of him through the medium of the submission agreement. This is always the most important document in the case. The arbitrator's jurisdiction is dependent upon the submission. . . . His powers are created by it; his powers are limited by it. He is in every sense of the word a creature of the submission. . . The most im-

*Arthur M. Ross in an address before a Conference on Arbitration and Labor Relations, University of California, Berkeley, 1954.

Mill may tie loom output control system into data processing unit

by R. E. Bayha
Remington Rand Div. of Sperry Rand Corp.

■ IN ONE southern mill the pick counters on a battery of looms have been tied in electronically to a control reporting area where graphs of loom operation are automatically prepared in order to gain tighter control over downtime and yards produced. The system produces a typewritten symbol on an electronic typewriter for every 200 picks on each loom in the battery. If a loom stops for any reason, the fact is quickly known because the typewriter stops recording in the column assigned to that loom on the typed graph. (See accompanying illustration.)

One typewriter can handle the graph for as many as 46 looms with each of the 46 character positions being assigned to one loom. The chart area is divided vertically into 15-minute time periods so that it is possible to determine how many, and which, looms are down in any given five-minute period.

To point out the saving in downtime in this centralized operation is unnecessary. Reporting delays have been reduced by this comparatively simple tie-up.

But the advantages *can* go even further.

There is some talk of setting up this system to record on paper tape, either with or without the typewriter graph. If this is done, the number of picks and, hence, the number of yards produced along with the speed of production and a full record of downtime can be processed directly to the data processing system for costing activities as well as work-in-process-inventory.

There are some problems, of course, in converting these counts into a useable system for punched cards, paper tape or magnetic tape for cost accounting and payroll purposes. It would be necessary to provide a means of identifying each count as to loom, weaver, and style—probably the most difficult problem to solve. It would also be necessary to determine whether to take the count at the end of a shift or at a loom change. Whether or not these problems will be analyzed or worked out later, it is conceded that the system would be valuable to both the production and the accounting departments.

There has been a continuing development of so-called "common language media" for these computing systems which has been applied successfully to other types of data communications involved in the filling of orders. Part of the peripheral equipment of a Univac File-Computer system, for example, includes the tape-

From paper entit'ed "Electronic Computers in the Textile Mill" presented at a recent AIEE textile electrical conference in Atlanta, Ga.

portant part of the submission is the stipulation of precise questions to be answered.

Where a formal grievance procedure has been followed and the parties' positions and contentions are already reduced to written form, the drawing of the submission may be a simple matter. If, however, the grievance procedure is informal and no written record exists, the submission may be difficult to formulate. In either case, the submission must contain all of the claims and questions to be ruled upon by the arbitrator. Whether unilaterally or jointly filed, it becomes the property of both parties once the arbitration machinery is invoked, and may not be changed during the arbitration process except by mutual consent.

Faulty or incomplete submissions may result in inequitable solutions, or in no solutions at all. The arbitrator cannot wander all over the lot. He is confined to the issue submitted.

The Hearing. Many an arbitration has been lost at the hearing. The preparation of an arbitration case is a matter for careful thought and expert execution. The only source of information available to the arbitrator is the hearing. On the basis of the record made there he must decide the issue. Parties often forget this and presume that the arbitrator is almost as familiar with their problems as they are.

It is of the greatest importance that the parties be prepared to furnish the arbitrator with all the necessary information at the time of the hearing. This normally starts with an introductory statement from each party. Then proofs are presented. These may consist of oral testimony and/or documentary evidence. The latter is usually by far the best proof. The failure of either side to tell the arbitrator its whole story through this process may result in misunderstandings and inequitable decisions. The arbitrator's principal job at the hearing is to listen and understand. It is the function of the parties to tell him the whole story.

Inexperienced participants in arbitration hearings are well advised to secure the services of an attorney or consultant with previous arbitration experience to handle the hearing. If the matter warrants arbitration, it merits proper presentation.

Loudness and abuse have never won an arbitration case. It is amazing that so many parties continue such behavior as a matter of routine at hearings. Whether it hurts the offender's cause depends upon the character of the arbitrator. It never helps!

Arbitration should not be entered into lightly or capriciously. When, however, arbitration becomes necessary, the groundwork must be carefully laid and the procedures meticulously followed. It is especially wise in arbitration to treat your opponent as you would yourself wish to be treated. Like the wife who hauls her husband before a court, company and union must continue to live together long after the arbitrator has rendered his verdict.

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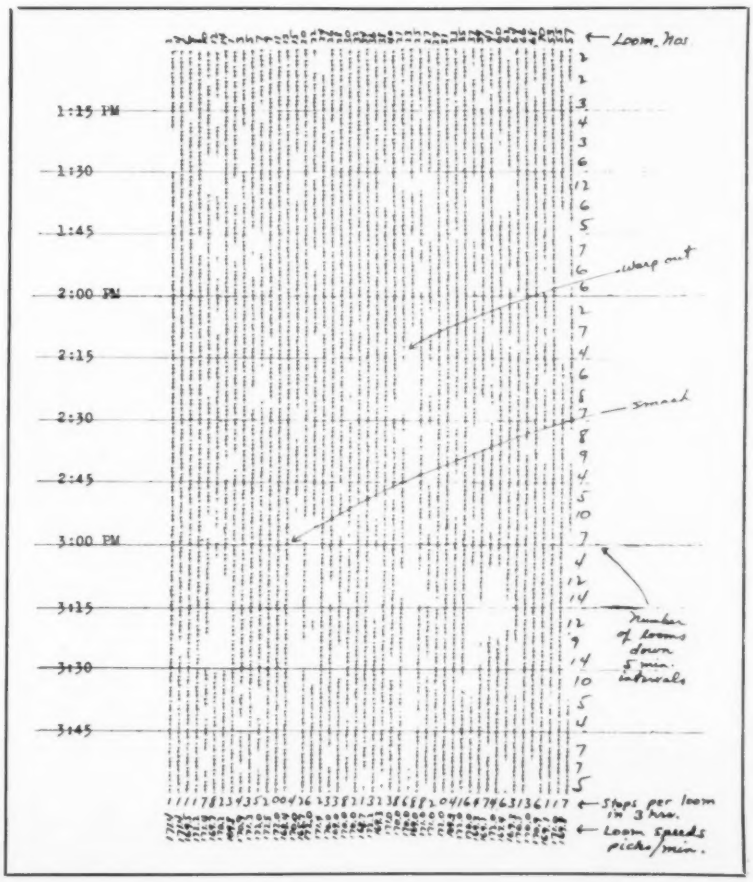
to-card converter and the tape-to-tape converter (that is, the paper tape to magnetic tape converter). Therefore, if this centralization of the pick counters on the looms continues to be effective, it is merely a matter of mechanics to tie it in directly with the electronic data processing system. The advantages are obvious.

This is only one indication of the possibilities for tying in production operations with a computing system in the continuous effort to gain control over the phases of textile mill operations. It shows that the decision, based on a feasibility survey, to install an electronic data processing system is not the final decision to be made by any means. Once embarked on a program of EDP, management can expect a continuing series of decisions to be made whereby the advantages of the system can be extended.



A typical loom operation chart produced on a typewriter by the method described here. Each vertical row of symbols represents the operation of one loom. Each symbol denotes that 200 picks have been made. Blank space indicates loom was not running. Handwritten notes were made by person analyzing the chart.

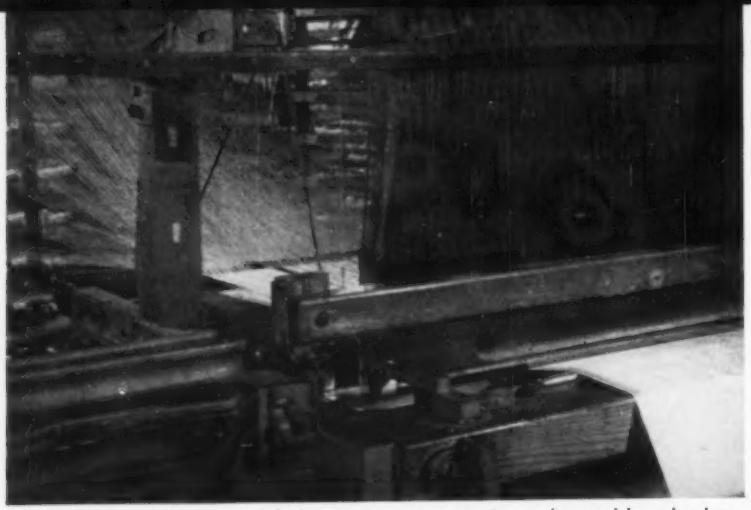


Photo 1. There are three principal elements in contour weaving: a Jacquard loom head motion, a creel instead of a loom beam, and a cam-shaped take-up roll. The cam-shaped take-up roll would not provide the required correction in all cases, particularly where a roll of large diameter would be involved. This consideration led to the development of the folding technique illustrated in Figure 2. These techniques permit weaving a variety of shapes.

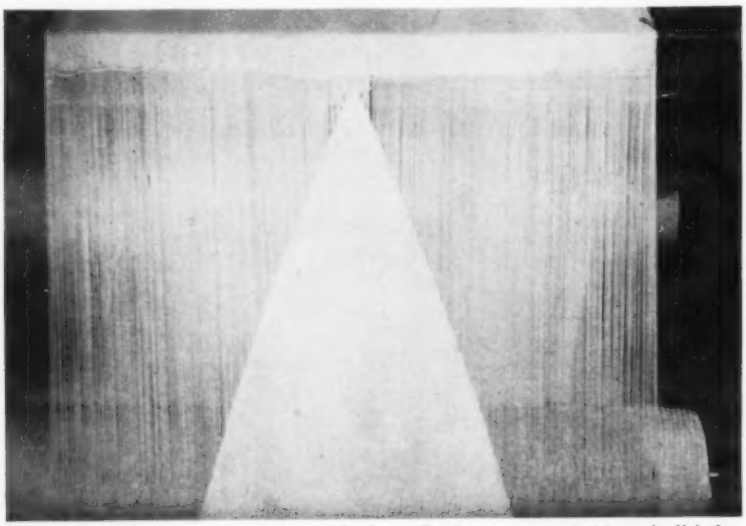


Photo 2. Typical shape as it appears in the loom. Surplus warp yarn is trimmed off before the lay-up. No filling yarn is trimmed off, cutting waste as compared to the older method.

Photo 3. The shape being woven in Photo 2 is shown here completed, finished and trimmed, and being placed over a mandrel to check for accuracy and size. The same procedure would be followed in laying up a part over a mould before impregnating the fabric with a resin.

WEAVING

How to weave spherical, conical, and other shaped fabrics

by A. R. Campman
and E. Koppelman
Raymond De-Icer & Engineering Co.

A PROBLEM of serious proportions that has confronted the reinforced plastics industry is that of tailoring flat fabrics into the complex shapes that are often required. Existing methods by which it has been necessary to cut such fabrics into strips and gores have been costly and have prevented the production of parts with any degree of reproducibility. The hand lay-up method has also required an excessive amount of nonproductive time for expensive molding tools while the hand lay-up would be in progress.

The second and equally serious problem has been that of quality control. Many of the reinforced plastic parts that we make are radomes or nose cones. These radomes house the radar or guidance systems of aircraft or guided missles, and must be transparent to the radar waves. Any lack of uniformity in the wall thickness or in the ratio of resin to reinforcing fiber will result in a distorted image, and it is frequently necessary to grind the surface of such parts, again involving extra costs.

With a view toward the development of a better method of fabricating such parts, we initiated a research program in 1953, and the results of that program are described in this article.

Jacquard Weaving. By using a Jacquard head, we are able to weave conic and similar shapes by narrowing the fabric through the elimination of specific warp ends

IN 3-D

at scheduled or programmed points. The filling yarn is continuous around the shape, and the card system which controls the width of the fabric or the circumference of the part, insures the absolute reproducibility of each part produced.

In designing a set of cards for a typical radome structure, we would normally be furnished either the equation for the surface of the object or a set of coordinates or offsets from stations on the long axis to the surface. We would then compute the circumference of the part at selected stations as measured along the surface of the part and not along the axis. These surface stations would be calculated in terms of picks for the fabric type selected and the corresponding circumference would be calculated in terms of warp ends.

These points would be laid out on standard Jacquard design sheets, and in the usual or ordinary case involving the symmetrical shape we would plot one-half the circumference to the right and one-half to the left of the centerline. These plotted points would be connected by lines which would converge at the apex or point of the part, and in the space inside these lines we would indicate in the usual manner which warp ends were to be raised at a particular pick.

Cam-Shaped Take-Up Roll. The ability to control the width of the fabric solves but half the problem. Many of the required shapes are surfaces of double curvature, as for instance, surfaces of revolution of circles or parabolas. Such shapes cannot be developed or laid out in a flat plane, and if woven flat would obviously not fit a mold or shape of double curvature. The problem is exactly that which has confronted map makers and cartographers for centuries—and reinforced plastic manufacturers for a somewhat shorter period of time.

A radome having a hemispherical end is shown in *Figure 1*. It

Photo 4. These are a few of the many shapes which have been produced by contour weaving.

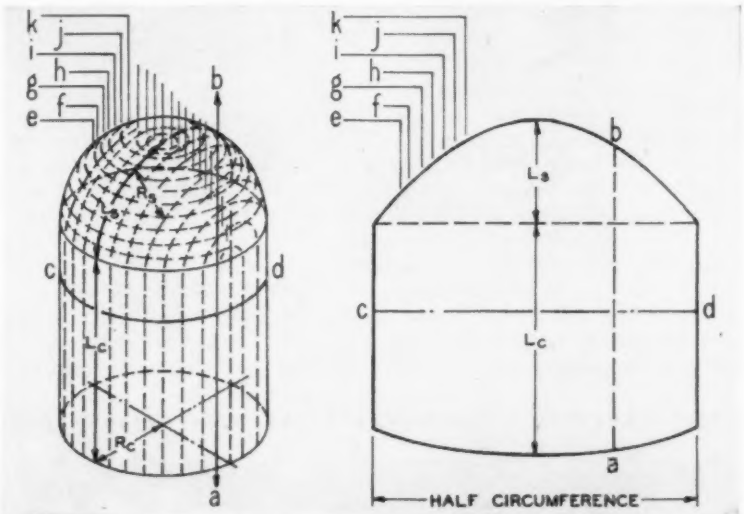
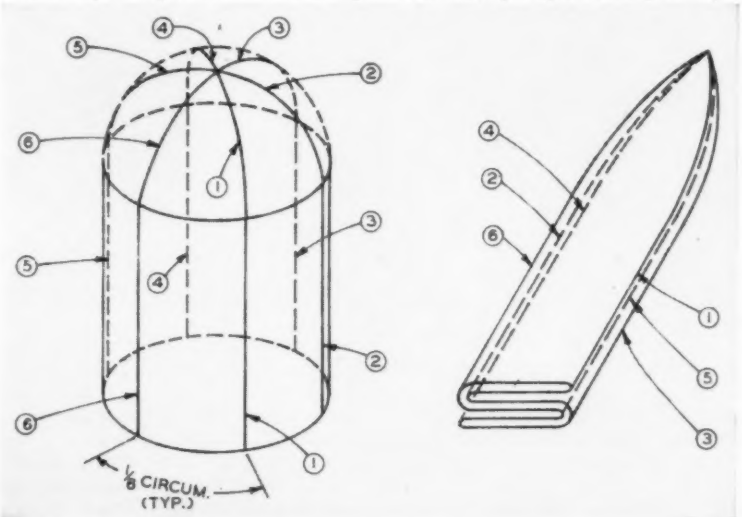


Figure 1. On the left is a typical contour-woven object—a radome. L_c is the length of the cylinder; L_s is the length of the surface of the hemisphere; R_c is the radius of the cylinder; R_s is the radius of the hemisphere; a-b is the warp direction, and c-d the filling direction; e, f, g, h, i, j, k, etc., are the float warp ends to be trimmed. On the right is the same object in weaving position. Cam-shaped loom take-up roll provides the curvature.

Figure 2. On the left is a combined cylinder and hemisphere (radome) to be woven with float lines 60° apart. Right: the schematic arrangement for weaving it by the folding technique.



would be possible in a hand lay-up to resolve the problem by cutting the fabric into strips and gores, and fitting these individual pieces together. By butting and patching it would be possible to approximate this spherical shape, but no two successive parts would be identical.

This procedure is time consuming and the resultant part would probably require a secondary grinding operation. It is next to impossible to maintain a uniform and consistent ratio of reinforcing material to resin with this method, and for electrical purposes each system must be compensated for its individual radome.

To get back to weaving a radome such as this: It has been found possible to compensate for this double curvature or spherical correction by substituting a cam shaped roll for the cylindrical cloth take-up roll used on the basic loom. This device permits a controlled differential take-up rate of each point on the surface of the fabric and if the take-up roll is properly designed, the fabric when opened to the computed or required shape, will have these characteristics: (1) each filling yarn will be circumferential and (2) will, if the object is symmetrical, lie in a plane perpendicular to the long axis.

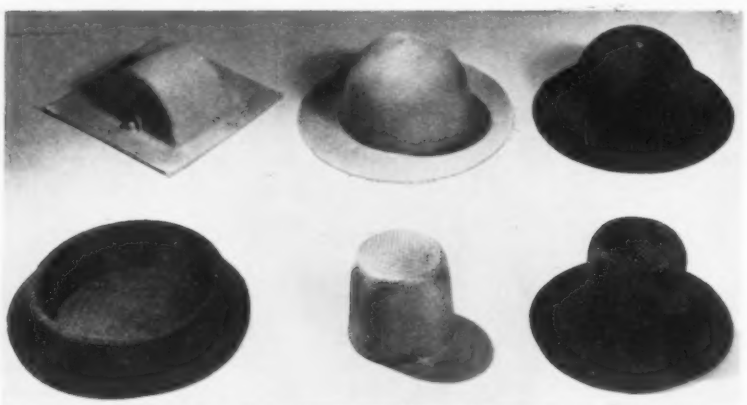
We have noted above the similarity in the problem involving surfaces of double curvature to that of the map-maker in attempting to portray on a flat paper a portion of the earth's curved surface. We have resorted to a map-maker's solution in finding an answer to our own problem. He evolved the theory of the polyconic projection and we, in designing the special take-up rolls, visualize each filling or circumferential yarn as lying in the base of a cone tangent to the surface of the object at that point. This concept permits that the dimensions of the take-up roll at selected points be computed with sufficient accuracy for all practical purposes.

Creel Replaces Warp Beam. Having adopted a device which advances the warp yarn at a varying and constantly changing rate, it is obviously impossible to continue to use the original warp beams, which permitted all of the warp yarn to advance at the same rate. For this reason, the standard warp beam was omitted and a creel arrangement was substituted. This allows each warp end to be individually tensioned and to be advanced at whatever rate demanded by the take-up roll. A portion of the creel is shown in *Photo 1*.

To review the changes that have been made: We have substituted a creel for the warp beam, we have substituted a Jacquard arrangement for the original harness motion, and we have changed the original cylindrical take-up roll. We are now prepared to produce on an automatic basis a variety of shapes, each of which is controlled to a high degree of dimensional reliability.

Weaving Folded Fabrics. It became evident that the cam-shaped take-up roll would not provide the required correction in all cases, particularly where a roll of large diameter would be involved. This

Heat shaped fabrics offer wide possibilities of use



Illustrative of the infinite variety of permanent shapes that can be produced from dynel fabrics by a simple heating, shaping, and cooling process are these typical forms: flange cover (upper left); miniature "mountie" hats (upper right); reversed curved contour (bottom left); and two deep drawn cups (bottom right).

■ SIGNIFICANT new design and engineering innovations in the production of radios, furniture, clothing, and many industrial parts may now be possible through the use of special heat-shaped fabrics of dynel acrylic fiber, according to A. L. Snyder, sales manager, Textile Fibers Department, Union Carbide Chemicals Company, division of Union Carbide Corporation.

The development, said to open a wide number of unique new uses for textile fabrics, utilizes the thermal pliability of dynel to achieve molded, embossed or stiffened shapes by a simple heating, shaping, and cooling process. The same processes used for molding plastic sheets are readily adaptable to the shaping of dynel fabrics.

Included among typical items that can be made with shaped dynel fabrics are covers for arm rests for furniture; protective packaging for delicate instruments; fabric covers for radios; for outdoor furniture; industrial flange and valve covers; ribbed battery separators; stiffened interlinings for outerwear; and many decorative uses where printed, shaped fabrics may be used.

Mr. Snyder reports the shaping process in its simplest form is done by forcing a cold mold into a piece of 100% dynel fabric that is clamped on the outer periphery and heated at 320 F. The fabric is held in shape while being permitted to cool. The clamped area can then be trimmed to size. The shaped fabric will retain its form until reheated to nearly the temperature of shaping.

Woven and knitted fabrics of dynel or dynel blends with other fibers may be shaped by the hot air process with molds of wood, glass, metal, plaster

would have required some major loom construction and we wanted where possible to use standard the available equipment. This consideration led to the development of the folding technique. *Figure 2* represents a shape consisting of a cylinder and hemisphere. Lines 1 through 6 are surface elements 60° apart and converging at the apex of the hemisphere. This, incidentally, is a pattern which might be adopted if we were following the older hand lay-up procedure.

However, if you will visualize the combination cylinder and hemisphere as being collapsed along the elements 1-4 and then folded three times as shown in 4B, you will see how such shapes can be set up for weaving. By folding in this manner, we have almost eliminated the spherical or double curvature correction. In weaving under this technique the shuttle sequence is 1-6, 6-5, 5-4, 4-3, 3-2, and 2-1. It is obvious that the filling yarn is again continuous around the circumference, and it again lies in a plane perpendicular to the long axis.

A typical shape as it appears in a loom is shown in *Photo 2*. The program card system is continuous, and as an object is completed the cycle is started over again without attention from the operator. This view will also show the surplus warp yarn that is trimmed off before the lay-up. It might be noted in passing that while the surplus yarn is wasted, there is no filling yarn trimmed off as would be done in cutting a part from flat fabric, so we are reducing the waste somewhat.

The shape being woven in *Photo 2* is shown in *Photo 3*, completed, finished and trimmed, and being placed over a mandrel to check for accuracy and size. The same procedure would be followed in laying up a part over a mold.

Photo 4 illustrates a few of the many shapes which have been produced. Security restrictions prevent our including a number of other shapes, and for that reason we cannot identify any of the shapes by project name nor discuss specific details of any one object.

Advantages of Contour Weaving. We feel that this procedure has many potential advantages. It will permit the use of match metal tooling and this in turn will make possible the production of parts that are dimensionally reproducable within extremely narrow tolerances. This inevitably leads to a simplification, in the case of radomes, of the related electrical system design.

The use of woven shapes will permit much closer control of the fiber-to-resin ratio, since it will be possible to maintain an almost exact and unvarying fiber content. The woven shapes have been easy to handle in laying up a part since there are no seams and the woven parts thus have enough strength to stand up under the sometimes necessary rough handling required in placing the successive plies over a mold.

It is believed that the uniformity made possible by this method will permit the design of thinner sections in radomes than has been hitherto possible, with potential and significant improvements in the related electrical systems.

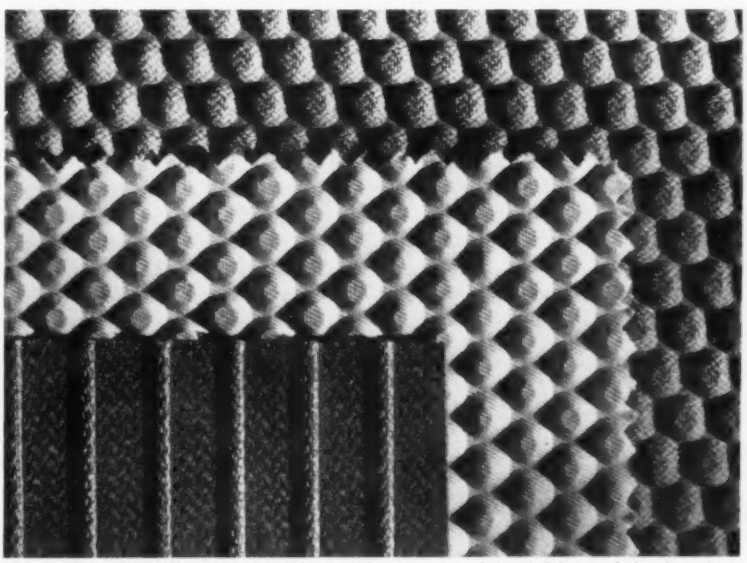
of Paris or papier-mache. The extent of shapability, or distortion in the molding operation, depends upon the number and size of yarns in the fabric. The twist of the yarns and the fabric weave are also factors.

Many woven fabrics have been drawn to stretch and set the warp or filling yarns to 160 per cent of their original length in a single operation. Woven fabrics of fiber blends, such as dynel with 25 per cent cotton, have been drawn to an extension of 120 per cent of original length.

Non-woven dynel felts and mattings can be embossed or curved and stiffened to form products like cap visor linings, although deep-drawing is not generally recommended.

Best results are obtained with woven dynel fabrics that have been piece dyed or boiled-off, rather than grey goods, to remove strains that might cause shrinkage due to uneven tensions in weaving and strains imposed during yarn manufacture, the Union Carbide executive noted. Similarly, knit goods can be heat shaped with greater success if finished beforehand.

According to Mr. Snyder, the stiffness of a shaped dynel fabric is dependent on the temperature, time of heating, and tension during the heating operation. The greater any of these factors, the stiffer the cooled fabric will be. Use of lower temperatures and low tension will produce molded fabrics as soft as before shaping. Semi-rigid structures can be made, however, and for even greater rigidity, the shaped fabrics can be treated with resins, he pointed out.



Unique decorative effects are possible in either woven or knitted fabrics of dynel, such as these dimpled embossings (above), and ribbed-stiffened cloth (below).

ACCURATE BLENDS . . . remedy

by H. C. Laird
Exclusive

THE COTTON spinner of today faces a problem in raw stock quality which can immediately be solved only by blending. The cotton suffers both from lack of staple uniformity and from overdrying; and while it is not possible to improve the quality of cotton by blending it at the plant, it is entirely practical to take any number of bales of widely divergent quality and blend them to get a perfectly uniform condition. Uniformity, after all, is the key to good spinning; for a spinning frame will run on practically anything as long as the roving has inch-to-inch uniformity and the frame has once been adjusted for this particular roving.

From the spinner's standpoint this lack of staple uniformity is one of the biggest cotton problems. To begin with, there is a serious lack of uniformity in cotton taken off the same plant—even when all the bolls are opened that are going to open. The bottom crop will be better than the top crop.

When cotton is stripped or pulled, the unopened bolls are gathered along with the mature stock; the gins open these and throw this weak and often worthless fiber into the bale. And we might as well face the fact that cotton will continue to be stripped, pulled, or gathered with spindle pickers, for there simply is not enough hand labor available to pick cotton in the old-fashioned way.

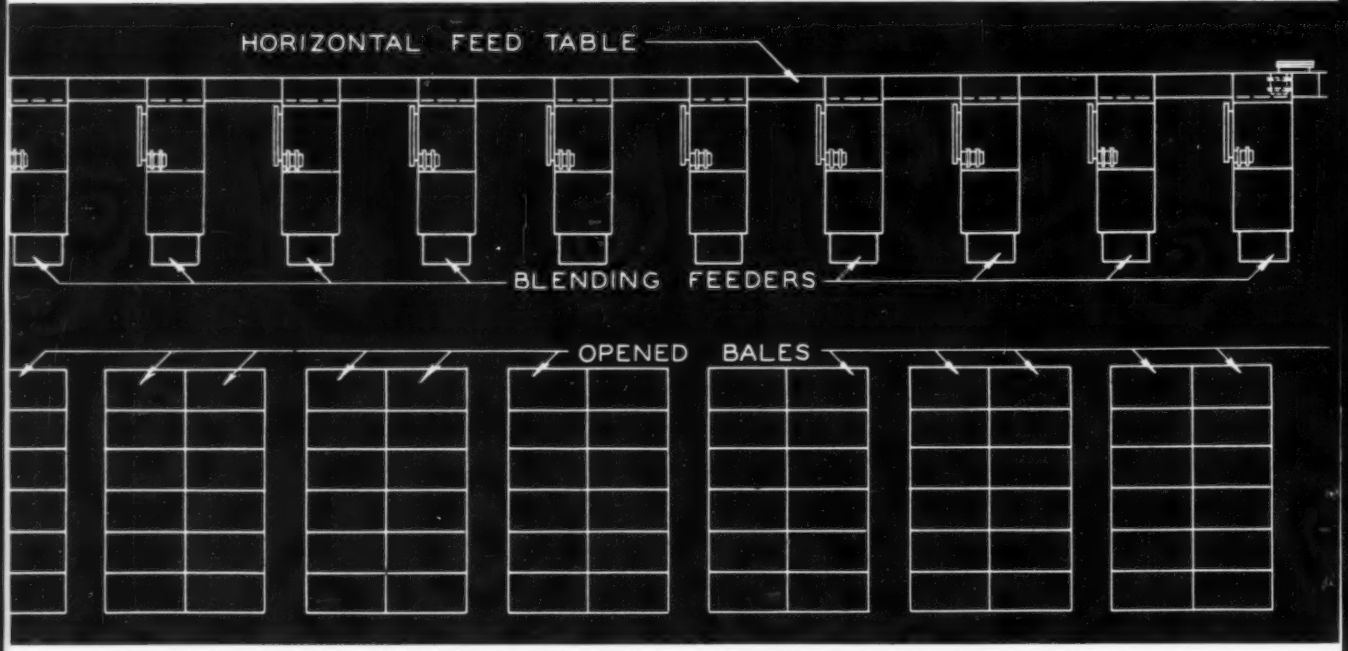
The Micronaire is of little value on cotton of this character. A very harsh cotton, which might show a Micronaire of 5.0 in the bottom crop could show up as a 3.75 or 4.00 if there is enough of this weak cotton in the bale.

Another serious problem is over-drying cotton at the gin. Practically all gins are now equipped with dryers. And although the original dryers were operated by steam and could do little if any harm, the steam dryer was expensive, and a gas or oil burner now delivers hot air directly to the conveying pipes and drying towers.

When a truckload of cotton is brought to a gin, the ginner must necessarily check it for dampness because it is impossible to gin wet cotton. The dryer burner will therefore be turned up enough to dry a particular lot of cotton, but perhaps only the top of the truck was wet where it stood out in a shower, and the already dry cotton was seriously overdried. Maybe after drying a truckload of damp cotton, the next truck presented needed no drying, but the burner was not turned down, and that truckload was heavily overdried.

It is practically impossible to tell by examination in classing cotton whether it has been over-

Here is the machinery layout in one mill where cotton is accurately blended at rates up to 6,000 lb per hr. Note at extreme right that



for the variability in cotton

dried or not. Laboratory tests are needed for this.

The cotton previously mentioned as having considerable quantities of short fiber will also dye irregularly, and since it is not practical in a spinning mill to lay down a very large mix of cotton, the character of the staple may vary quite considerably from one day to the next, and it may be impossible to make yarn which will dye evenly.

Blending. The accurate blending of a large number of bales can completely eliminate this dyeing problem, and also improve the running of a spinning room by delivering a more uniform roving to the spinning frames. Blending methods which were worked out years ago for making heather blends in cotton mills employing raw stock dyeing can blend any number of bales so accurately that any handful of picker lap will contain cotton from all bales in the blend.

The cost of such blending is not serious, and it offers many advantages to mills having trouble with uneven dyeing or with too many ends down in the spinning room due to a highly variable fiber distribution in the roving. It can also effect some cash savings by enabling mills to run a cotton which they could not risk putting in a small mix, but which can easily be handled in a big one.

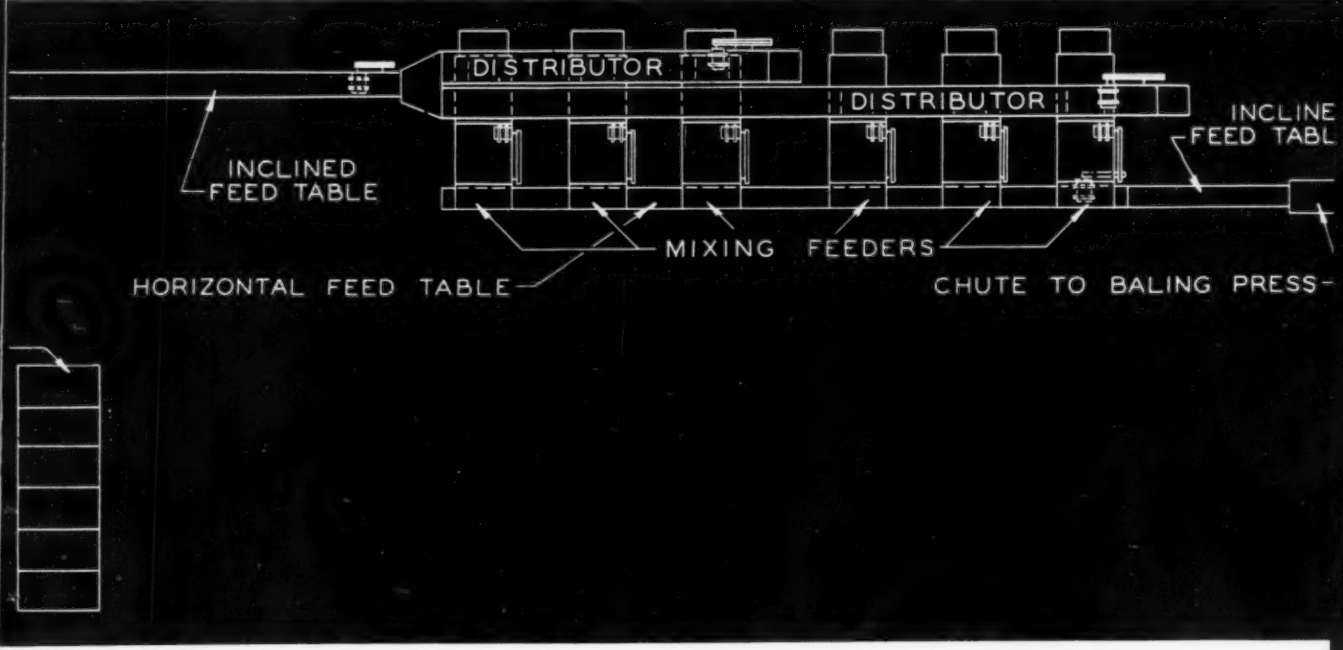
This multiple blending system also makes it possible to produce yarn of uniform cleanliness. These saw-type lint cleaners can load a bale with neps, seed coating fragments, and pepper trash. The cotton may look good in the classer's sample, but it will not make clean yarn. A disproportionate number of such bales getting into a small mix can result in a highly variable yarn appearance from day to day.

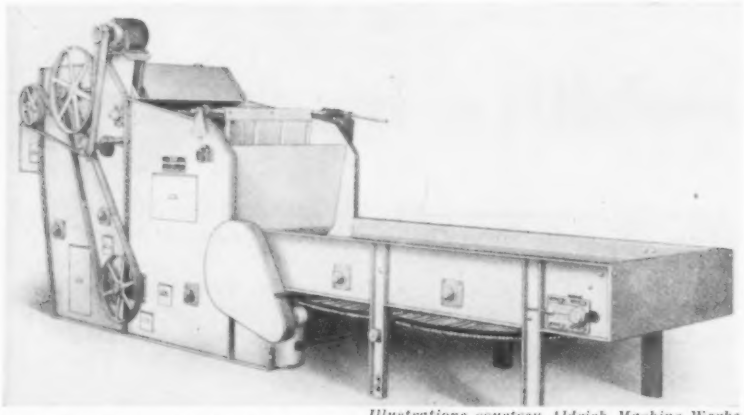
Obtaining these extremely accurate blends is a rather simple matter, as the plan in the illustration shows. This layout is designed to accurately blend about 5000 to 6000 pounds of stock an hour. If the opening and cleaning room has space for handling a 30-bale mix, then it would be convenient to blend up to 1500 bales of cotton at a time.

As this cotton is delivered by car or truck, it would be placed in 50-bale lots behind the ten blending feeders, and fed into these just as it would be fed into the blending feeders in the opening room. It is easy to get cotton from five or six bales in each blending feeder, and ten of these feeders will therefore provide 50 to 60 doublings.

The ten feeders discharge upon a high-speed feed table, which delivers the stock to a distributor over some secondary or mixing feeders. These mixing feeders not only multiply the doublings for better blending, but tear the stock up into finer bits for more intimate mingling. With 50 to 60 doublings in the primary feeders,

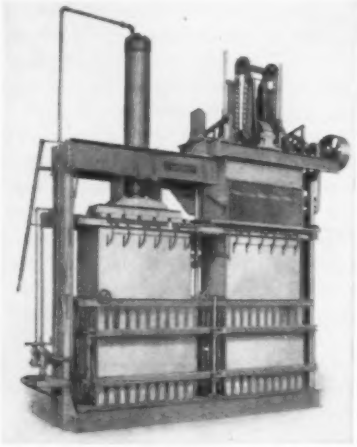
blended stock leaving the system drops through a chute to a baling press on the floor below for baling before storage until needed.





Illustrations courtesy Aldrich Machine Works

Ten of these Lummus blending feeders are utilized in the large-lot blending system pictured on the preceding page. Stock to be blended can be laid in a sandwich on the automatic extended apron, which will feed it into the blending feeder as required to keep this feeder filled to a constant level.



The baling press, which in this mill is located on the floor below the blending room, is a Lummus double-box down-packing press with automatic tramper. It operates continuously, and the attendant only has to turn the boxes and tie out the bale.

these six secondary feeders will provide 300 to 360 doublings.

The 50 bales of cotton blended in this manner are put in the warehouse in one block. Another group of 50 bales are put in another block alongside the first one, and so on until there are 30 blocks, representing 1500 bales of cotton. To put down a mix in the opening room for the pickers, one would take one bale from each of these 30 blocks, and then even a small piece of picker lap will contain fibers from all 1500 bales. In such a blend every inch of roving will have practically the same distribution of immature or overdried fibers as any other inch, and yarn made from cotton so blended will dye with absolute uniformity.

The arrangement shown in the illustration is a layout provided for a mill which found it convenient to have the baling press on the floor below the blending room. This baling press can be on the same floor and fed mechanically, or on an upper floor and fed by a condenser. If it is desired to preclean the cotton as well as to preblend it, the cleaning machinery will be put in the blending department, and there would be little if any cleaning equipment in the opening room feeding the pickers.

There can be no doubt about the extreme accuracy of blends obtained in this manner—in blending a 100,000-pound lot of cotton containing 20 different colors, it is impossible to detect any difference in the shade between any bobbins taken from any part of the whole lot. This blending method is being used in woolen mills, which will sometimes blend 15 or 16 different kinds of wool together, and the resultant blend defies any attempt to detect irregularities.

It may be that this is the only practical answer to the problem of non-uniformity in cotton bales. The spinners seem unwilling to get together to fight the Department of Agriculture about this matter of gin damage, and the farmers seem to be well satisfied with the present method of paying them for cotton that looks good, but isn't. The farmer's only complaint seems to be the amount of his bonus. The spinner will therefore have to shift for himself, and this method of getting absolutely uniform cotton may in many instances be his best shift.

Cause and Correction. Various contributors to TEXTILE INDUSTRIES have during the past several years pointed out the very serious problems that have been brought to the spinners by changed methods of gathering and ginning cotton. The United States is a mechanized country, and the production of anything that can not be mechanized is very likely to disappear. The mechanization of cotton culture, gathering, and ginning has introduced some very real and serious problems in making good yarn from the kind of cotton that the gins are able to deliver.

Until quite recently there was only one practical reason for raising cotton, and that was to make yarn. There is now another and extremely important reason, and that is to make votes. Cotton is a political football, and the game is mostly played to suit the politicians and the farmers, rather than the spinners who afford the only market for cotton and who certainly ought to have some control over their raw materials.

As matters stand, the spinners have no control whatever over their principal raw material, and must perforce take what the cotton classers of the Department of Agriculture decide is good for them. It has been stated with complete truth that cotton today is raised for the government loan. The farmer has no particular interest in anything but a purchaser, and the CCC is required by law to purchase cotton at a specified price. This price is naturally higher for the better grades than for the lower, and perhaps most of the trouble from which spinners suffer today is due to attempts to raise the grade of cotton by cleaning processes in the gins.

The ginner often knows that he is damaging the cotton, but must keep his customer, the farmer, satisfied. The farmer will be satisfied if the gin can manage to take three or four thousand pounds of bolls, twigs, sticks, grass, and other rubbish mixed with some cotton, and turn out a bale of

something that the government cotton classer will declare as strict middling cotton. Since cotton is still graded on the basis of visible trash, it is merely necessary to put it through some process in the gin which will grind up the trash too finely to be noticed in a cotton classer's sample, and thus produce automatically a higher grade.

Several years ago, the most pernicious cotton cleaner of all was introduced to the gins in the form of the saw-type lint cleaner. This machine was originally manufactured a good many years ago under the name of re-gin. Its action on cotton was so injurious that it was unlawful to tender re-ginned cotton for sale without plainly tagging it as such.

This machine was revived several years ago under the auspices of the Department of Agriculture for the purpose of getting the higher grade which benefits the farmer but accentuates the spinner's problem when the grade is obtained in that manner. The first of these saw-type cleaners was only moderately injurious.

It was what was known as the "flow-through" type, and the cotton was handled in a very loose and fluffy condition. It had the great disadvantage of taking out a very rich waste, and ginners frequently piped this waste to an incenerator to keep the farmers from realizing the shrinkage in their cotton. Frequently this shrinkage more than offset the value added by increased grade.

Having once accepted a saw cylinder as a suitable means for cleaning cotton, it was a short step to introducing a regular card licker-in to the gins, and that is what is mostly used today. Every carder knows that a licker-in is injurious to his cotton, although it is a very good cleaner. About 40 years ago auxiliary lickers-in on cards were popular for a while, but everybody threw them out when machinery was available for cleaning cotton in the opening room instead of having to use this injurious machine in the card room. The fact that these auxiliary lickers-in were a failure in the textile industry caused spinners generally to oppose strongly this method of cleaning cotton in gins.

These things are mentioned as background for the current problem, which is to decide what to do about the preparation of cotton for a spinning mill. The obvious remedy to most of the spinners' problems in this respect would be to get rid of harmful cleaning processes in the gins.

If the gins simply undertook to gin cotton with as much cleaning as is practical without damage to the lint, each mill would have to do its own cleaning, in its own way, for its own needs. There does not seem to be the slightest chance of anything like this happening so long as cotton production and handling is governed by politics instead of economics.

If the cotton isn't any good, and American spinners can't use it, it can always be sold abroad at a big enough discount; and so long as the American taxpayer is willing to foot the bill for this discount, cotton will be handled in such manner as to give the farmer apparently the best of the deal, even though he may actually be getting the worst of it by constantly shrinking markets.

Since it seems unlikely that anything is going to be done to strike at the roots of the trouble, mill men must consider a means of ameliorating these difficulties by making cotton uniform through multiple blending.

Quick way to determine vegetable content of wool

by Henry R. Keller

Wool Standards Laboratory
Agricultural Marketing Service

■ A RECENTLY developed, rapid method of determining the quantity and types of vegetable material in grease wool, makes it possible for the seller or buyer of grease wool to have this information more quickly than previously used procedures.

Equipment and Materials Needed. To perform this test it is necessary to have available the following equipment and materials:

(a) 4 standard nested screens, 8" in diameter, 2" deep, and having openings of approximately ½", ¼", ⅛", 1/32" or 1/64". These screens are available at most laboratory supply houses or may be home-made. All dimensions are approximate and may be altered to suit the needs.

(b) Sodium hydroxide—the household lye variety is suitable and least expensive. Usually in 13-ounce cans.

(c) 2 one-gallon cans; either stainless steel or fruit cans may be used.

(d) Glass or plastic ¼" diameter rod for stirring.

(e) Scales — laboratory balances sensitive to 0.1 gram.

Method. Take a 300.0-gram sample of grease wool by drawing random handfuls from representative bag, bin, or fleece. For increased test accuracy, draw two or more samples for testing. Place sample in one of the gallon cans. In the other gallon can place one 13-ounce can of household lye and add 1¼ quarts of *cold* water. (This makes approximately a 20% solution). Heat solution until it comes to a rolling boil.

Pour in enough of the lye solution to cover the wool sample well. Allow to set for approximately 5-10 minutes, stirring frequently with rod.

Screens should be nested in order of mesh size, with the coarse mesh on top. Pour dissolved wool sample onto top screen, washing continuously with a stream of cold water. Decant sample so that the sand will remain in the bottom of the can. After sample has been poured from can, wash residual vegetable material on nested screens vigorously with a stream of cold water. Separate screens.

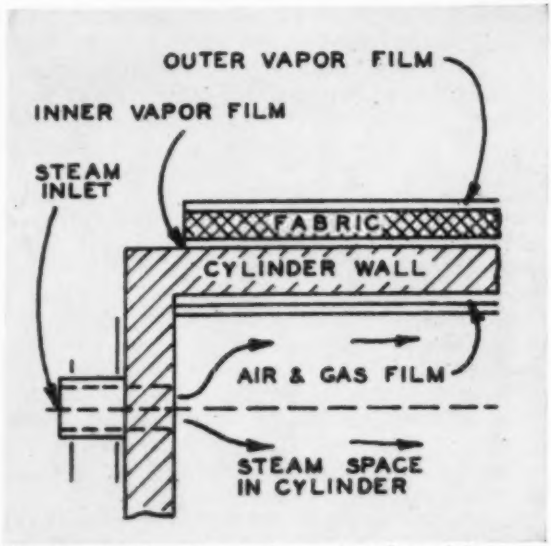
No. 1 (top) screen will contain cockle burrs, if any; No. 2 screen will retain spiral or other burrs; No. 3 screen, sand burrs; and No. 4 screen, miscellaneous shives, chaff, etc.

If a few burrs fall through to lower screen, place in proper screen. Wash each type of screened vegetable matter thoroughly with cold water, remove to a suitable piece of aluminum foil or aluminum pan and dry as thoroughly as possible in oven (laboratory or kitchen) without burning.

Weigh each type of vegetable material as accurately as possible to closest 0.1 gram and divide each weight by 300. The resulting figures will give the percentage of each type of vegetable material in the grease wool. Addition of the percentages will give a percentage of total vegetable material in relation to the grease wool.

Some ways to improve

efficiency in cylinder drying



How air and moisture films develop on the surfaces of dryer cans.

by Leo Walter
Exclusive

IN CONTACT drying, heat can be transmitted either by contact with hot platens or by pressing the material against rotating hot cylinders or rollers. By describing what happens in a simple steam-heated cylinder dryer, the basic idea can be gained for multiple-cylinder dryers.

The main factors to be considered for efficient contact drying are speed of rotation, rate of heat transfer, cylinder surface temperature, contact pressure of the web of material to be dried on rotor surface, and air volume and velocity around the cylinders or heated rollers.

The speed at which cylinders or rollers rotate is a very important variable drying factor. Change of speed of rotation obviously varies the rate of drying of material.

The time of contacting the hot drying surface is the decisive factor for regulating the intensity of evaporation of moisture from the fibers, and must not be too short. The acting area of the drying contact and the specific pressure of contact are also important factors for variation of rate of drying, assisted by air movement for removal of evaporated moisture.

The temperature differential between the yarn or fabric and the cylinder surface has to be chosen to provide maximum output from a cylinder dryer at minimum cost. Actual cylinder surface temperature must, however, be kept within the allowable temperature range, otherwise the fibers may get overheated and damaged, or finish, color, and/or appearance may suffer from excess drying.

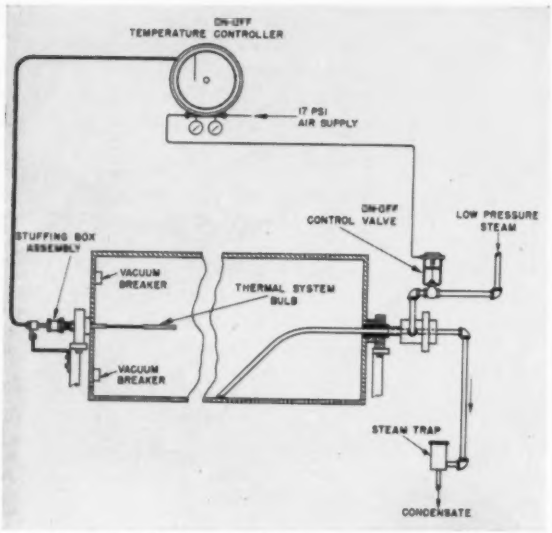
For steam-heated cylinder dryers the cost of drying depends very much on thermal efficiency, i.e., steam consumption per unit weight of dried material. Steam consumption of steam-heated cylinder dryers varies from mill to mill, and also according to the moisture content and nature of the dried material. Steam pressure used, speed of rotation, efficiency of heat transfer from steam via cylinder walls to the material, and other factors, such as idle machine times and irregular loading, influence the actual steam consumption.

Over-all drying efficiency is, of course, influenced by the nature of the material, such as its quality, distribution, and the thickness of the web, together with moisture content when entering the drying section. The influence of working conditions on surface temperatures of heated cylinders is much more pronounced than usually realized, and the following might act as an eye opener for possible improvement in dryer operation.

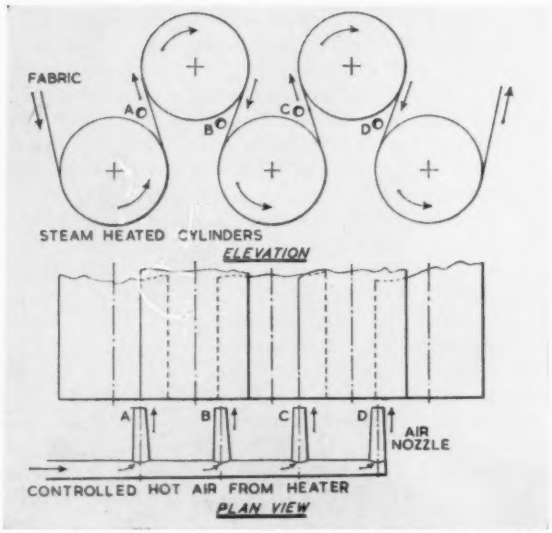
Basic Principles of Contact Drying. Drying of fine materials by contact heat differs from hot air drying in the way heat is brought into action. In drying of textiles, one side of the web is in close contact with a section of the hot cylinder surface, while the other side of the web is exposed to the air of the room. The latter has great influence on proceeding of moisture evaporation, and air movement for carrying away the vapor has to be provided for.

The flow of heat, and heat transfer from steam as the heating medium, to the heated substance proceeds as follows: Steam enters the drying cylinder via a revolving joint, and gives up its latent heat by condensing within the cylinder space. Dry steam, fully saturated or with very little superheat, should be used at lowest possible steam pressure, because the latent heat of saturated steam is greater at lower pressures, and is the only heat that matters for producing the hot cylinder surface.

It is not as well-known as it should be how important is the efficient removal of condensate and of gas and air within the steam from the steam space drying cylinders or stack rollers. The so-called "film-theory" says that various layers of films are formed at



A simple method for the control of the temperature of dryer cans.



Hot air blown between dryer cans and fabric increases drying effect.

the inner cylinder wall, which films are detrimental to good heat transference, and must be removed. A condensate film and an inner air film make heat flow from the condensing steam via the cylinder wall to the outer cylinder surface difficult.

Reduction, or better, elimination of these two inner films by efficient trapping of condensate as soon as it forms, and by air venting of cylinders by means of automatic air vents which allow air or gas enclosures to escape from cylinders, are most important for efficient dryer operation.

It is most important to check from time to time the performance of steam traps, otherwise waterlogging of the cylinder may occur, causing undertemperature with reduced output. Where dip pipes are used, they must be kept in good working order.

Rate of Drying and Outside Films. The effect of heat which has penetrated from the steam space inside across the cylinder wall is decisive in many ways for the rate of drying. Heat has to pass across an outer film of vapor before it can enter the web and has to overcome another vapor and air film before it escapes in the open air.

The rate of drying depends also on the shape of the outer cylinder surface and on the finish of the contact surface. Large cylinder diameters allow longer contact and also make possible light contact pressure between heated surface and dried web. Cylinder and roller surfaces should be absolutely even, and for this reason machined to a very fine surface finish and polished.

It is highly advisable to fit automatic air vents to drying cylinders. It is most important to realize that steam pressure and temperature of saturated steam correspond only when the steam is dry, saturated, and free from air and gases. Indication of a pressure gauge on the steam inlet pipe to cylinders is therefore only a reliable measure of cylinder surface temperature if automatic air venting is applied.

Surface Temperature Measurement. Cylinder surface temperature can and should be measured by means of surface thermometers. These instruments, which are available in several forms from instrument makers, usually work on the thermocouple principle, whereby two metal wires are fused together and create a minute electric current when brought into contact with a heated surface. The electromotive force is proportional to temperature and a galvanometer scale can be calibrated in units for direct temperature readings. These surface thermometers are inexpensive and simple instruments and deserve widest use for periodic checking of cylinder or can surface temperatures.

Tests carried out often disclose uneven temperatures across the cylinder width. In general, temperature is lower at the ends and higher in the middle of a cylinder because heat losses from uncovered end surfaces reduce temperature of exposed parts.

Tests have also revealed that frequently distribution of surface temperature is irregular. A cylinder may have hotter or cooler spots, caused by uneven steam condensation inside or by partial water-logging. The remedy is improved condensate drainage and sometimes it is most advantageous to apply steam recirculation on rollers of smaller diameters.

Thermal Dryer Efficiency. It is obvious that temperature of the cylinder surface is always somewhat lower during the drying action than when the machine runs without load or stands still during idle periods. During drying of goods the web takes out heat continuously, while a standing or periodically under-loaded machine will approach steam temperature.

The thermal efficiency of a dryer, however, depends on heat actually utilized for drying purposes. The amount of useful heat depends on temperature differential between fabric and cylinder.

and on load of the machine and on absence of idle periods, which interrupt heat flow.

The enemies of thermal dryer efficiency are heat losses. They occur during heating up from cold in the morning, during reheating after a break, and during idle machine times. These heat losses can be reduced, and all such heating-up and stand-by heat losses should be carefully investigated.

Insulation of end surfaces of cylinders, lagging of steam supply pipes, the use of tight stuffing boxes, without increasing friction and power consumption are good means for improving thermal efficiency.

As has been mentioned before, any form of cylinder drying has one thing in common with hot air drying: The evaporated moisture from the substance must be carried away by currents of air. A heated cylinder cannot itself absorb water vapor driven out from the web; this can only be done by air in movement.

There will always be a thin film of vapor between cylinder and web. A greater amount of water vapor will be formed above the upper fabric surface, and must be dissipated.

A thin space between cylinder and lower web surface is filled with water vapor, which is carried with the web until the latter leaves the dryer surface. The mixture of water vapor and air is then carried away by the surrounding air. Evaporation is thus continuous only on the upper surface, where the vapor is carried away by air currents.

An artificial increase in the velocity of these outer air currents will considerably increase drying effect. This is done in modern paper making machines, where hot air is blown in between the cylinder and the web and onto the upper web surface in order to increase the air volume to absorb and carry away the vapors. Blowing of hot air between cylinder and material is now applied to cylinder drying and it is highly recommended.

A.I.L. gives standards for wash-wear cottons

■ THE AMERICAN Institute of Laundering has announced current "certified washable seal" standards for wash-wear cottons, those that under normal conditions would be laundered (in commercial laundries or in the home) in formulas containing hypochlorite bleaching solutions. The standards apply to white, predominantly white, and some printed or colored materials.

Explaining that the word, "current," is used because of the changing nature of the cotton wash-wear problem (new developments may require new tests and new standards), the Institute said it believes the standards are complete, fair, up-to-date, and they will measure true quality of a garment or fabric in regard to end-use performance.

The number of launderings specified is 24, using the White Work formula for 20 launderings and manufacturer's instructions for four.

It has been the experience of the Institute that serious problems with wash-wear cottons may not show up until the 13th to 20th laundering, therefore the unusually large number of launderings demanded. These problems include such quality factors as progressive and excessive shrinkage and color change. Furthermore, the White Work formula is used because normal accepted laundering procedures indicate that this is the way the garments and fabrics would be handled in homes and laundries.

Highlights of 1957 national textile safety contest results

■ ESPECIALLY newsworthy in the recent final bulletin on the 1957 Textile Section Contest conducted by the National Safety Council were the 4 per cent reduction in injuries compared with 1956 and the 6 per cent decrease in the accident frequency rate.

There were 1,897 injuries reported in 1957 by the 243 companies that completed the contest. The accident frequency rate was 4.10.

Perfect records were made by 46 of the contesting firms. Total number of manhours worked was 463,108,000, an increase of 2 per cent over 1956.

First place winner in Group A of Division 1 (entire companies which operated more than 360,000 hours in January and April) was B. F. Goodrich Textile Products, Akron, Ohio. Ranking second and third in this category were Tallassee (Ala.) Mills and Graniteville (S. C.) Co., respectively.

In Group B of Division 1 (companies that operated less than 360,000 hours in January and April), Medical Supply Co. of Rockford, Ill., and Safety Clothing & Equipment of Cleveland, Ohio, tied for first place. Deltox Rug Co., Oshkosh, Wis., ranked third.

Winning first place in Group A of Division 2 (individual mills which operated more than 535,000 hours in January and April) were: Martha Mills, Thomaston, Ga.; the Slater, S. C., plant of J. P. Stevens & Co., Inc.; and the textile research laboratory of the Du Pont Co.

Berkeley Mills, Inc., Balfour, N. C., was the winner in Group B which operated between 275,000 and 535,000 hours. Ranking second and third were Firestone Tire & Rubber Co. in Sao Paulo and the Durst Plant of Greenwood (S. C.) Mills, respectively.

Of the contesting mills which operated less than 275,000 hours, the Williamston (S. C.) Division of Amerotron Corp., the Arial Plant of Alice Mfg. Co. in Easley, S. C., and the Elljean Plant of Alice Mfg. Co., Easley, S. C., won the first, second, and third places in that order.

How a worsted mill boosted yarn output

Light source (arrow) for each thread illuminator unit in this room is suspended from the ceiling over the motor driving the frame—a vertical type installation. Light beam is directed into frame end where reflectors send it along length of frame and return. The light is visible just above the separators in background of lower picture. Note that the threads on these two frames show up equally well although the frame to the left in the lower picture is spinning black yarn while the one on the right is producing yarn of light color.

Strong beams of light just above thread boards enable operators to

quickly spot ends-down

Staff prepared Exclusive

A SOUTHERN mill spinning worsted yarns ranging from 17s to 40s (worsted counts) has installed a thread illuminating device on 24 Saco-Lowell worsted spinning frames. Each of these frames has 200 spindles.

According to management at this mill, the device minimizes the time delay in detecting broken ends, thereby reducing the time required to put the end back up upon breaking. The installation eases the operatives' efforts and makes the job easier for spinners.

Efficiency has been improved, considerable waste is saved, and more yarn is made in any production period compared with former records of production without the aid of the illuminating device.

The two-beam illuminating device includes a mercury-vapor lamp mounted on one end of the frame at the level of the threads between the delivery roll and the pig tail. A mirror at the opposite end of the frame reflects the light which illuminates the ends and makes them more readily visible to the operatives from either end of the frame.

Colored yarn has no detrimental effect upon the effectiveness of the units in making the threads more readily visible. In some instances the threads appear to be luminescent, and they always appear in bold relief for better visibility.

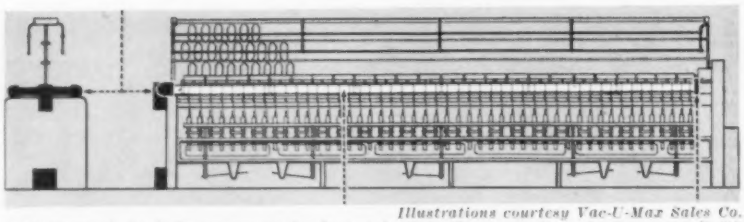
In view of the prohibitive cost of waste in a worsted mill, the thread illuminators have proved worthwhile in controlling this most critical factor in successful operations, according to the mill spokesman.

Installation is simple, but the unit must be mounted on sturdy supports, and accurate alignment is necessary for effective operation.

Electric power costs to operate the units are negligible. Bulb cost is the only notable expense item in operating the units after proper installation. The approximate life

of a bulb in this instance is about 1500 hours; this makes bulb cost amount to about 2½¢ per hour per bulb.

Several units have been in operation for about two years in this mill, and in view of the worthwhile results achieved with the trial units, all frames were equipped with the Meiners "Twin-Beam" thread illuminators.



Illustrations courtesy Vac-U-Max Sales Co.

Installation of the light source on the foot end of the frame as shown in these end (left) and front elevation views is much more common than the vertical arrangement pictured on the preceding page. Light beam appears as a thick white line intercepted by the yarn ends.

Tufters used 18 per cent more yarn, 14 per cent more fabric in '57

■ TUFTED textile manufacturers used 18½ per cent more yarn for tufting last year than they consumed in 1956, analysis of the accompanying table from a recently published Bureau of the Census report indicates. As shown, a total of 203.2 million pounds of yarns of all types were used, compared with 171.9 million in 1956.

Of the more than 203 million pounds of yarn utilized, 64.5 million were cotton yarns, 106.4 million 100 per cent rayon and/or acetate, and 14.8 million wool.

In addition to the surface yarns, 95.1 million pounds of fabrics were used last year for backing tufted fabrics, compared with 83.4 million in 1956, an increase of 11.7 million pounds.

Backing fabrics used last year consisted of 21.3 million pounds of cotton duck, 24.1 million pounds of cotton sheeting, and 49.7 million pounds of jute and other fabrics.

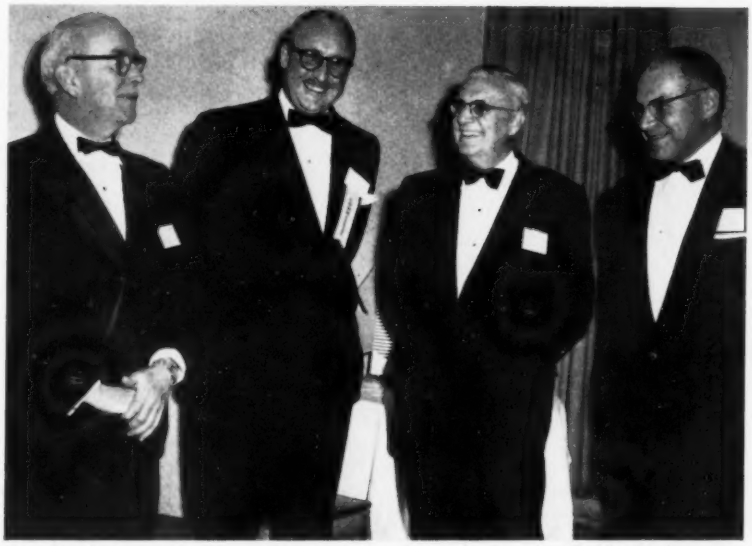
Yarns and Fabrics Used in the Manufacture of Tufted Products

(All figures are in thousands of pounds)

Type of yarn or fabric	Consumption			
	July 1-December 31, 1957	January 1-June 30, 1957 (revised)	July 1-December 31, 1956	January 1-June 30, 1956
YARN AND FABRIC CONSUMED IN THE MANUFACTURE OF TUFTED PRODUCTS, TOTAL	155,996	142,396	139,432	115,874
Yarns for tufting	105,545	97,710	93,322	78,550
Cotton	33,532	30,985	33,130	31,303
Rugs and carpeting	20,751	19,750	19,060	20,645
Other tufted products	12,781	11,235	14,070	10,658
100% rayon and/or acetate	53,625	52,741	50,320	38,111
Rugs and carpeting	52,027	52,183	49,673	37,440
Other tufted products	1,598	558	647	671
Wool yarns	7,797	6,971	3,675	3,142
Rugs and carpeting	(D)	(D)	(D)	(D)
Other tufted products	(D)	(D)	(D)	(D)
Other yarns	10,591	7,013	6,197	5,994
Rugs and carpeting	10,264	6,763	6,094	5,937
Other tufted products	327	250	103	57
Fabrics for backing tufted products	50,451	44,686	46,110	37,324
Cotton duck for rugs and carpeting	10,498	10,786	11,628	12,010
Cotton sheeting	13,824	10,287	13,357	9,957
Rugs and carpeting	239	307	330	311
Other tufted products	[1]13,585	9,980	[1]13,027	9,646
Jute fabrics for rugs and carpeting Other fabrics for rugs and carpeting	26,129	23,613	21,125	15,357

(D) *Withheld to avoid disclosing figures for individual companies.*

[1] *Includes some purchased tufted fabrics.*



Canadian business and government get together during the Canadian Textile Conference in Montreal. L-r: John English, acting deputy minister of the Federal Department of Trade and Commerce; H. Roy Crabtree, general chairman of the Conference and president of The Wabasso Cotton Co. Ltd.; H. V. Lush, president of the Canadian Manufacturers' Association; and George H. Glass, chief, Tariff Division, Federal Department of Finance.

"Canadian textiles for Canadians"

Despite a per capita consumption of textiles in excess of 42 *yards—three times the world average—and a growing population of roughly* 17 *millions, Canada's textile industry "must concern itself not with expansion, but with sheer survival." The Canadian Textile Conference focused attention on this vital problem, in which imports (particularly from the United States) are a major factor.*

Staff report

THE CANADIAN Textile Conference held in Montreal this spring was unique in the history of Canada's textile industry, for it brought together for the first time representatives of all segments of the industry, providing a forum for the exchange of knowledge in the fields of technology, industrial relations, and marketing, in which authorities from both sides of the border presented papers.

Having as its theme, "Canadian Textiles For Canadians," the Conference endeavord to reach retail and consumer levels as well, and among the participants were representatives from department stores and consumer organizations. On display were products of Canada's textile industry for both consumer and industrial markets.

Considerable attention was focused during the three-day conference on the pressing problem of textile imports, and a declining textile production despite a growing Canadian economy. In opening sessions, H. Roy Crabtree, Conference General Chairman and president of The Wabasso Cotton Co., Ltd., traced the growth of the textile industry in Canada and the pattern of tariff legislation that has affected it over the years.

"This industry has long suffered under the pressure of an excessive volume of imported textiles, but during the past six or seven years conditions have been extremely grave," he said, "and there has been at times considerable thought that the industry had been entirely abandoned by the country it has served so well."

But there was some indication, he went on, that the new government was beginning to recognize the industry's problems, particularly the unloading at dumped prices of large volumes of foreign textiles.

"We will continue to urge the [Canadian] Federal Government to take action to halt the unfair competition now flowing over our borders. We must believe that our difficulties will be corrected through the necessary action at Ottawa. But, we will not sit back and just wait; we never have and never will," he said in a concluding portion of his talk.

"Dumping Paradise?" Despite an increase in Canada's population

by three millions over the last six years, there are 19,000 fewer textile employees than there were at the beginning of this period. These statistics, pointing to a depressed Canadian textile industry, were brought out by H. V. Lush, president of the Canadian Manufacturers' Association, in an opening address of the Conference that was attended by more than 1000 industry representatives.

"That so many companies in the textile industry should be in serious trouble is a standing indictment of short-sighted and misconceived national policies, policies which it is to be hoped will shortly be reversed," he said.

" . . . the volume of one class of cotton fabrics alone imported into Canada from the United States last year was nearly *seven times* the 1939 volume," he went on, despite a 50% rise in population over the same period. This increase in imports can be attributed largely to tariff reductions, he said.

" . . . such tariffs as are left," he continued, "are easily scaled by those mass production countries whose huge domestic market or low-wage structure enable them to produce more cheaply than we can. . . Surely we should not be aspiring to the title of 'dumping paradise' of the world!"

The future of Canada's textile industry is an urgent problem of the new government—a government which is backed by an unprecedented parliamentary majority.

"You have every right to hope and expect that it will act swiftly, vigorously, and intelligently to remove the insuperable disadvantages under which your industry is operating in the domestic market in relation to its foreign competitors, thereby restoring your competitive position," declared Mr. Lush.

In concluding, he said that a realistic tariff scale, along with the successful promotion of Canadian textiles to Canadians, "will assuredly see Canada's textile mills once more producing not for 50%, but for upwards of 75% of the domestic market."

Outlook. In his talk, "Outlook For The Textile Industry In The Canadian Economy," C. F. Fraser, economic consultant of Montreal, pointed to a declining fabric production which has shrunk from 72% of the domestic market in the 1935-1939 period to a present 51%.

This percentage, he said, " . . . is far too meager to provide the volume of production needed to assure stability of employment and a return on investment adequate to attract the equity capital needed for further modernization to keep pace with the tempo of technological advance." He then cited from the Royal Commission's Report on Canada's Economic Prospects, " . . . that in 1954 net income after taxes for primary textiles as a whole was a mere 2.4% of net worth, as compared with 11.7% in that year for all manufacturing."

This low return on investment, he continued, cannot be attributed to any lack of effort on the part of the industry, for postwar gains in the productivity of Canadian textile mills reflect an alertness in meeting the challenge of technological advance.

The anticipated increase in the value of textile production in Canada in the period 1956-1980 based on statistics compiled by the Dominion Bureau of Statistics and the Gordon Royal Commission " . . . is only slightly more than half the increase forecast for . . . the Gross National Product," Mr. Fraser said. On the assumption that the industry maintains its present share of the domestic market, its growth rate would be substantially slower than that not only for the economy as a whole, but slower also than other typical sectors of advanced manufacturing.

He brought out the fact that the widening gap in per capita consumption between the U. S. and Canada reached 10.9 lbs in 1952-53, up from a difference of 5.9 lbs in the 1926-1929 period. That this should have occurred during a period of high economic growth in Canada, in which living standards between the two countries have narrowed, suggests that aggressive promotion and improved merchandising methods hold real promise for stimulating the growth rate.

However, Mr. Fraser pointed out that an increase in per capita consumption would not mean an increase in sales of Canadian textile products if the increased demand were only to stimulate textile imports, to which the Canadian economy is now vulnerable. He urged the industry " . . . to press for a national trade and tariff policy in order to achieve equality of opportunity to compete in the domestic market with foreign producers of textile imports."

Textile's Share. The Canadian textile industry has not retained its share of the consumer dollar, according to statistics presented by T. W. Kober, Director of Vickers & Benson, Ltd., Toronto, in his paper, "How The Textile Industry Can Share in Canada's Boom." In 1946, 14.9¢ out of every consumer dollar were spent on clothing and personal furnishings, but by 1954 this had declined to 11.6¢ on every dollar. Moreover, the downward trend is expected to continue, he said.

However, Mr. Kober stated that Canada's economy was growing and that long-range planning should not be affected by the present temporary pause in the rate of business expansion. He outlined the following measures for the industry if it is to share in Canada's boom:

(1) Products must be buy-worthy and desirable, for consumer satisfaction is involved.

(2) Products must be presold; the consumer must be shown how he can derive satisfaction from clothing and other products.

(3) The retailer's support must be enlisted and a tie-in provided between advertising and point-of-purchase material.

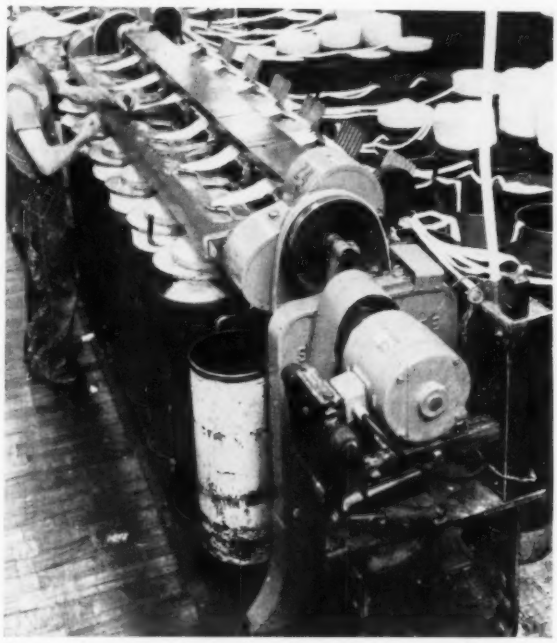
In concluding, he stressed the opportunities for greater sales through an industry-wide fundamental research project which would delve into the underlying motives behind textile purchases. This would be of value to the industry as a whole, he said, and serve to guide the marketing strategy of each firm.

He also suggested cooperative advertising and sales promotion between manufacturers of complementary products to create a consciousness among the public for textile products.

What about high temperature motors?

Here are the answers to application questions raised by textile men

by G. B. Dunn, Jr.
Small Integral Motor Department
General Electric Co.



Drawing frame in southern mill is driven by 75 C rise TENV motor.

A NEW APPROACH to motor application in the textile industry is the development of a line of 75 C rise TENV (Totally Enclosed Non-Ventilated) motors. This high temperature motor line is one of a whole series of recent technical advances and changes made by the integral horsepower induction motor industry—it is representative of an industry trend.

These changes have resulted in larger horsepower ratings in smaller frame sizes, accompanied not by a sacrifice but by an improvement in product quality. Reductions in frame sizes for a given horsepower rating were made possible by employing:

1. Improved materials
2. Improved evaluation methods
3. Improved design methods

In extending the design philosophy that was used in originating the new line of general purpose motors to a new line of motors for the textile industry, there were many factors to consider: lint, maintenance, safety, size, efficiency, reliability, modifications, and economics.

Design Considerations. First, there was the age-old problem of lint, particularly in cotton and woolen mills. It is well established that general purpose open or enclosed fan-cooled motors which are entirely satisfactory in other industries may not be satisfactory in atmospheres heavily laden with lint.

In most mills, lint is present from the time the bales of raw cotton are opened, to the picking and carding machines, roving and spinning operations, spoolers and warpers, slashers, looms, and in some cases even in finishing areas. So the first consideration in this new line of textile motors was to design a motor that would operate satisfactorily in an area where the atmosphere and surroundings were heavily laden with lint.

Minimum maintenance was the second design consideration. It was almost impossible to design and build small open motors which were completely self-cleaning over long periods of time under all conditions of fiber length, density of lint, motor speed, etc.

A third major requirement of the new line was that it must not represent a fire or safety hazard to the textile user. Finely dispersed lint lying inside or around electrical equipment could represent a fire hazard if the possibility of sparking exists or surface temperatures are above the ignition temperature of the fiber.

Motor size was the fourth consideration. Inefficiently used floor space is costly.

The over-all efficiency level of the old line of motors had to be maintained in the new line. Many areas in textile mills are air-conditioned, and a decrease in motor efficiency would have meant more operating costs to the user in the form of heavier air-conditioning loads and more power required to drive his machines.

Sixth, before introduction to the textile industry on a mass scale, the new line must have proven reliability. Decreasing size or increasing temperatures at the expense of life or reliability would certainly not be a satisfactory solution.

Seventh, the mechanical design must be such that it could be easily and economically modified to satisfy the many variations required by textile applications. These requirements include foot-mounted motors, flange and face-mounted motors, and motors with integrally-mounted brakes. The basic mechanical design had to be

flexible; it had to be economically adaptable to many application conditions.

The final consideration of major importance was designing a line that could be economically manufactured and marketed. It is obvious that a product line that is inherently uneconomical to manufacture can not be to the best long range advantage of either the manufacturer or the user.

The integral horsepower induction motor industry has become a high-volume business producing motors for a wide range of industrial applications. If automation techniques are to be employed and resultant economies realized, standardization of component parts is necessary. It would be to the economic advantage of the manufacturer and ultimately to the textile user to have a textile line and a high-volume line designed with as many common parts as possible.

Not a Fire Hazard. The 75 C TENV motors have not been used in the textile industry on a wide basis. Consequently, there have been several application questions raised by textile motor users about this construction.

Apparently there is some misunderstanding as to what is meant by a motor's temperature rating. Motor nameplate temperature rise is the ultimate motor winding temperature rise. This is measured by placing a thermometer at the hottest point on the winding end turns when the motor is delivering rated output.

Some textile people have expressed the concern that frame temperature of TENV 75 C rise motors might be high enough to ignite cotton lint. This concern is groundless. The surface temperature of 75 C rise motors does not approach the ignition point of lint, which is at least 446 F (240 C).

It can be concluded that a 75 C TENV motor with outside surface temperature of 90 C does not present a fire hazard to a cotton mill.

Not a Safety Hazard. Some textile people have expressed concern that a 75 C motor would be a personnel safety hazard. It is probably true that if a person were to leave his hand on a 90 C or a 77 C surface indefinitely (such as on a 75 C or a 55 C TENV frame in a 40 C ambient) he would be burned. However, we have found by trial that if a person attempts to touch such a surface his nervous reactions are such that he immediately withdraws.

In the case of those who tried, no burns or soreness resulted. Neither of these motors represents a serious personnel hazard as evidenced by the absence of complaints during three years of experience in applying high temperature motors.

Effect of Heat on Processing. Test data were also taken to determine the temperature rise of the air immediately above a TENV motor and its effect on textile processes. The rise in air temperature at 6 in. above these motors is approximately 3.7 C for a 55 C TENV motor and 5 C for a 75 C motor.

This small difference between the two appears to have insignificant effect on textile processes located immediately above the motor: There is no need to be concerned about a "tower of heat" immediately above a 75 C motor.

Effect on Air Conditioning. In the textile industry, the misconception exists that motors with higher temperature ratings will increase air-conditioning loads. A motor's contribution to the air-conditioning load is not determined by the temperature rating of the motor. Its contribution is determined solely by the watt-hours of losses that the motor must dissipate in doing its job.

It is the motor's efficiency, then, which really determines its contribution to the air-conditioning load. If the motor efficiency remains constant, the contribution to the air-conditioning load would remain constant. The 75 C motor is designed with efficiencies at least equal to the 40 C motor commonly used in the textile industry.

Report on cotton-rayon blends in print cloth

■ RESULTS of studies of cotton/rayon blends in 80-square print cloth were shown recently at a conference sponsored by the technical departments of American Enka Corp., American Viscose Corp., Courtaulds (Alabama) Inc., and Courtaulds (Canada) Ltd. The companies were hosts to mill men who attended from several states.

A summary of developments in the studies indicated that a blend of two-thirds cotton and one-third rayon permits increased carding speeds and a lower waste factor when the rayon is carded separately.

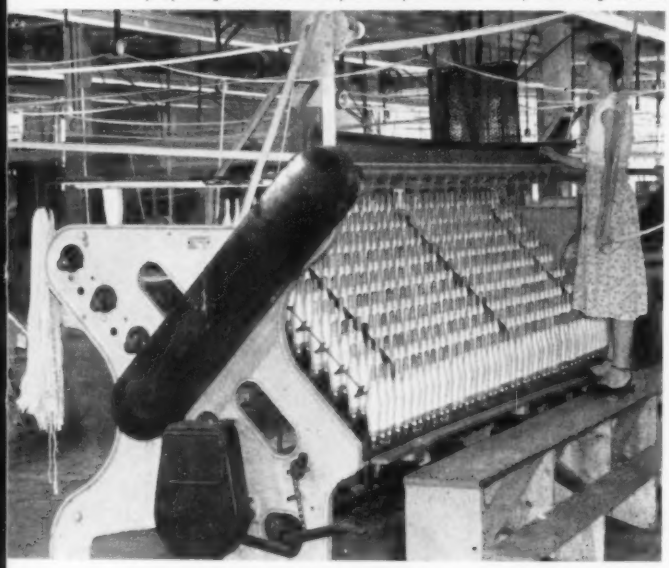
Spinning advantages of the blend permit lower twist multipliers, increased production, and improved yarn evenness.

Aesthetic advantages are evident in the finished fabric in terms of rich luster, luxurious hand, good drape, white goods without severe kier boiling and bleaching, bright colors with improved light fastness, and better definition of print pattern. Napped fabrics have a clear, clean, uniform surface with a luxurious hand.

Improvements noted were particularly evident in the "wash and wear" finishes. It is in the resin finished fabrics that the blends show to best advantage. A blend of two-thirds cotton and one-third rayon was used throughout the studies and after resin finishing showed greater strength after finishing, greater strength retention after repeated laundering, and marked improvement in strength retention after repeated laundering with chlorine bleach, as compared to the all-cotton control fabric. The strength improvement was noticeable in the filling.

The gains in individual characteristics were, in many details, marginal gains; however, the total advantage was notable, and the blend idea offers great promise. The advantages of the blend are evident when the resin treated fabrics are compared; and the drape, luster, and hand can be altered at will by merely varying the denier of the rayon used.

A quiller like this is suitable for getting yarn onto small packages in preparing to make sample warps on the warp dressing frame.



Making samples often interferes with production and reduces mill efficiency

CAN YOU USE A SAMPLE DEPARTMENT?

by Osbert Hughes
Exclusive

PRESENT-DAY merchandising methods for most textile fabrics seem to call for an ever-increasing amount of special sample work. In addition, in order to stay abreast of the times, most mills find it necessary to do a considerable amount of research and experimenting on new weaves and constructions, different yarn counts and blends, and a great variety of different color and pattern combinations.

To attempt to integrate the making of samples into the normal production departments of the mill, even though a special sample man is assigned to supervise and expedite this work, usually results in a disruptive effect on the production and general efficiency of the departments involved. Also, many employees working on a full work-load assignment under an incentive-pay system find that the introduction of sample work into their job usually results in an adverse effect on their production, with a consequent drop in their earnings. Then, too, it is usually advisable to keep any new ideas in fabric samples strictly confidential until they are ready for offering to the trade.

For these reasons many mills find it desirable to set up a separate department devoted solely to the making of samples and other experimental work. However, unless a mill is prepared to make a quite considerable investment in machinery, floor space, and special personnel, a completely self-contained sample manufacturing set-up may be out of the question. A certain amount of this work will almost always have to be done on regular production machinery. This will likely include the carding, spinning, dyeing, slashing, and finishing operations. Warping and weaving, which probably are the most important parts of sample work, may well be done in a separate department. A relatively inexpensive method of producing samples, partly in a separate department and partly integrated in the regular production departments, might well be done as outlined below.

One of the major bottlenecks in the making of samples is the warping process, sample warps being frequently made in very short lengths from minimum quantities of special yarns and colors. These small quantities of special yarns can be handled in the regular carding, spinning, and winding departments quite easily if given special attention by a person responsible for samples.

Most dyehouses are equipped to dye small amounts of yarn, as low as one pound, for their own requirements in color matching. The big problem is to make a warp from these small amounts of yarn. The simplest machine for this purpose is the warp dressing frame. This machine is in general use in the worsted industry on fancy goods, and also in synthetic and silk weaving, especially on decorative fabrics.

If the sample warp is made with plied yarns of sufficient strength to weave without warp sizing, the slashing process may be omitted. By winding the sample yarn on a number of small tubes or cones, depending on the available equipment, the yarn can be placed in the warper creel according to the re-

quired pattern as laid out in the designing draft. When the warp is made it can be drawn in and the samples required woven on a designated loom, which may be one set aside for sample use or an available loom in the regular weave room.

If it is necessary to size the warp this can be done in the regular slashing department. The slasher will normally operate on yarn on section beams; however, since the sample yarn will probably be on small packages such as tubes or cones, a small portable creel should be built. This will be set up at the slasher to replace the section beams when samples are to be slashed. The yarn will then be sized and run on to a warp beam. This warp beam will very rarely be the beam to be used in weaving but instead may contain a large number of various yarns and colors.

The next step will be to transfer the sized yarn back on to small packages suitable for warping on the warp dressing frame. This can best be accomplished by means of a filling quiller machine. A suitable rack should be built and installed at the rear of the quiller. The yarn may then be run through the machine and will then be on ordinary filling bobbins. These bobbins are easily placed in the creel of the warp dressing frame, and any sample warps desired made with them. Also, these sample bobbins of yarn can readily be marked for identification and stored for future use.

By setting up a sample department equipped with the two machines mentioned above, i.e., the warp dressing frame and the filling quiller, plus possibly a small tube or cone winder, a mill can greatly expand its production of samples with a relatively small investment in machinery. Also, by removing this critical work from the production departments involved there will be no loss in regular production while the cost of making samples will be lowered considerably.

When special samples are wanted time usually is of the greatest importance and the mill equipped with a special sample department should be able to make up samples in much less time than if the work has to be done in the regular production departments of the mill. For these reasons many mills have found that a special sample department soon pays for itself.

The set-up outlined above shows perhaps the most versatile arrangement of sample-making machinery, as well as perhaps the minimum of special machinery that should be installed. The warp dressing frame makes it possible to make very short sample warps from extremely small quantities of yarn, while the quiller makes put-up on many small packages suitable both for immediate use and for storage for future needs. Additional machines, in the form of looms, spinning frames, twisters, etc., can be added if the investment is considered desirable, and the efficiency and capacity of the sample department will be increased accordingly.

Test cotton to cut costs, mill men told at Clemson

Staff report

■ TO GET the best cotton at the most favorable ratio of cost to quality, you must know exactly what fiber properties are needed to manufacture a satisfactory product, Edward W. S. Calkins of U. S. Rubber Co. told approximately 125 mill men attending the A.C.M.I. Open House at Clemson, S. C., recently.

It is desirable to know accurately how much a given increase in fiber strength is worth to the mill, or the value of an increase or decrease in Micronaire, or fiber length, or length uniformity.

Also, it is desirable to know as much as possible about the fiber properties that are being produced each year in each part of the belt, and balance the price of the cotton against its value to the mill in the type of product manufactured. In one instance, a one per cent increase in strength was worth as much as a three to four per cent saving on the price of raw cotton, Mr. Calkins indicated.

In combed yarn, you may find that high fiber length uniformity enables you to take out less noils, or it may be that some cotton that contains a high percentage of short fibers is selling so cheap that more noils may be taken out while getting more pounds of yarn for each dollar spent for cotton.

In such products as print cloth, the most important cost factor subject to the cotton buyer's control may be running conditions. It may be worthwhile to pay more for cotton in order to make the labor savings that go with fewer ends down in spinning and fewer loom stops.

In each mill, the machinery is different, the products are different, the requirements are different, and the problems are different. Study your own problems, test different kinds of cotton in the laboratory and in the mill, and find out what is best for your own operation, Mr. Calkins advised.

It seems safe to estimate that at least one per cent of the money spent for cotton may be saved, and this should be about enough to pay for a minimum laboratory operation for a mill using about 120 bales a week, he concluded.

AN IMPORTANT problem is getting the manufacturers to work with the cotton people to obtain a product to do the job, and another important problem is price, Ben F. Tipton, assistant vice-president of Woodside Mills, told the group. Laboratory operations can be most helpful in buying, classing, and blending, he indicated.

The wide range of cottons used at Woodside Mills is obtained by direct buying, because buyers can go to points where fiber properties are available to suit mill requirements, Mr. Tipton said. The cotton is checked at the source and is spot-checked at the mill in this instance, and the mill laboratory is used to assist the cotton department.

Positive and helpful results have been obtained in the laboratory. Card sliver varied 13-15% at the start. Upon marking and blending an average of the stock in the warehouse, variation was cut to slightly over 10%.

The program was carried still further by getting the superintendent and card room overseer to establish a system of blending by weight instead of unit volume, and this helped reduce card sliver variation to about 8 per cent. The total effect amounts to an over-all reduction of 70 per cent in variation, and this has helped in all processes through weaving, Mr. Tipton concluded.

Tear along this line to post in weave room

CHECK BOXING AND TRANSFE

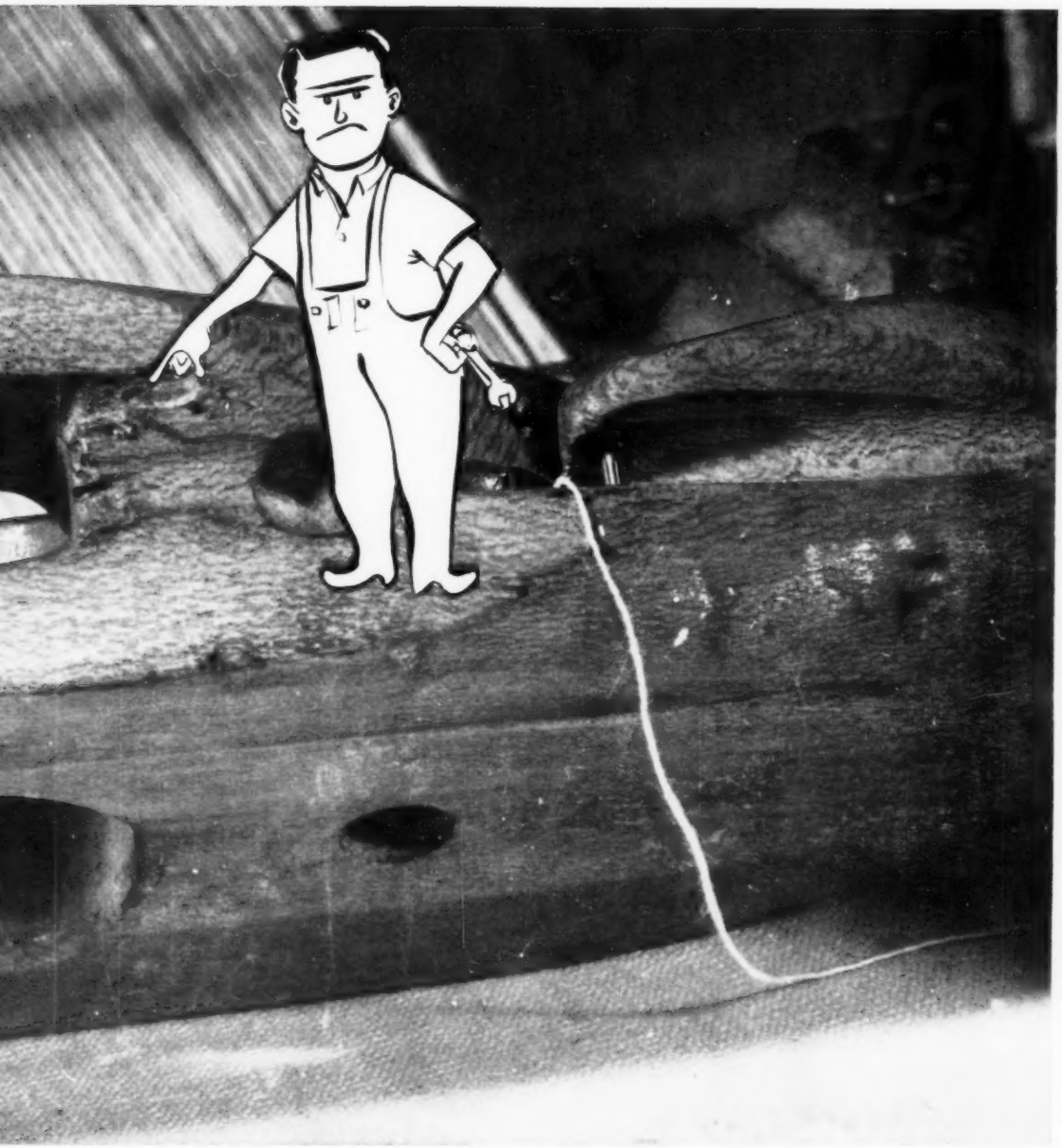
Avoid filling knife marks like this

Textile Industries

25

Tex

FER MOTIONS REGULARLY



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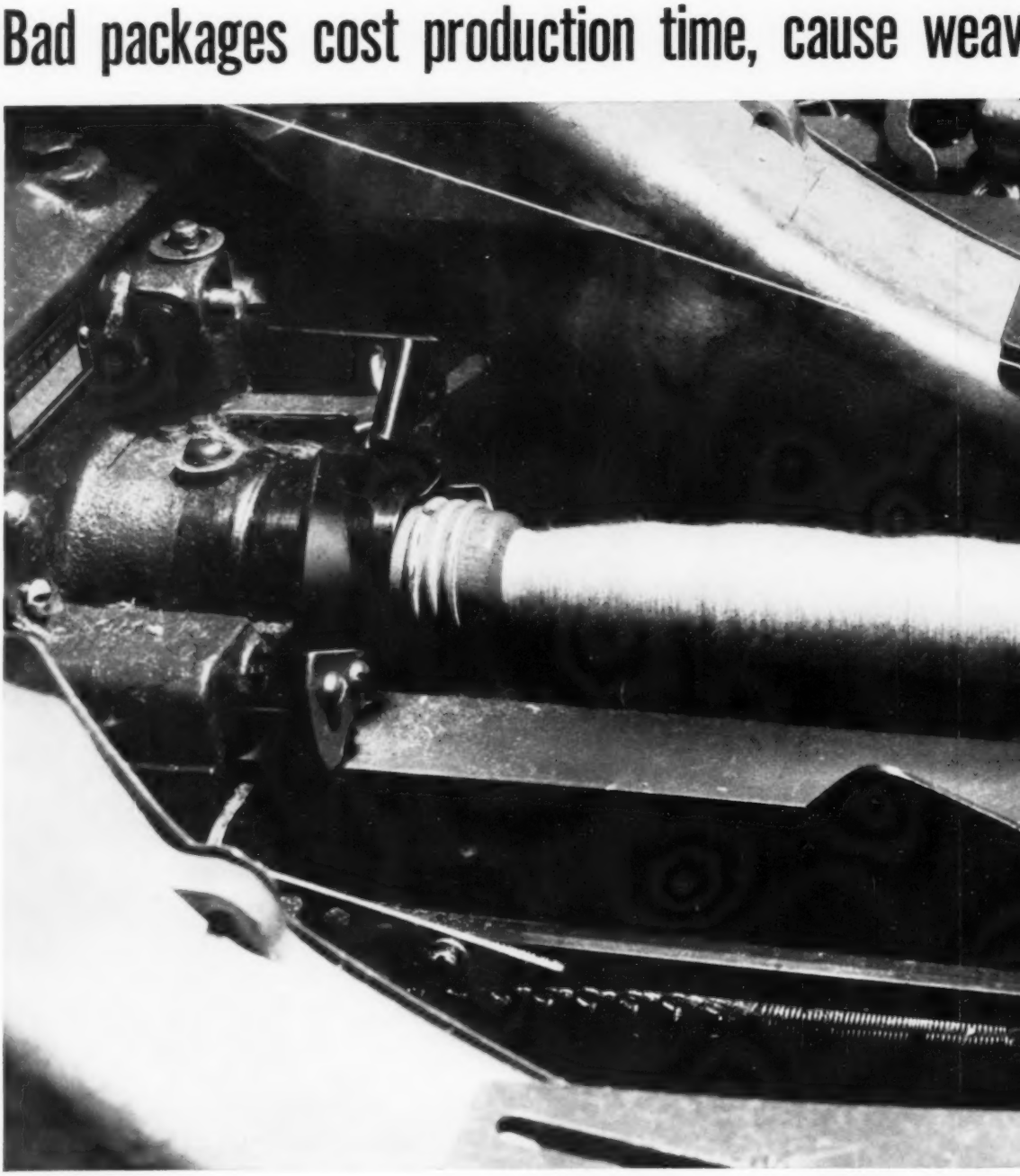
MAKE IT WIND CORRECTLY!

Bad packages cost production time, cause weav

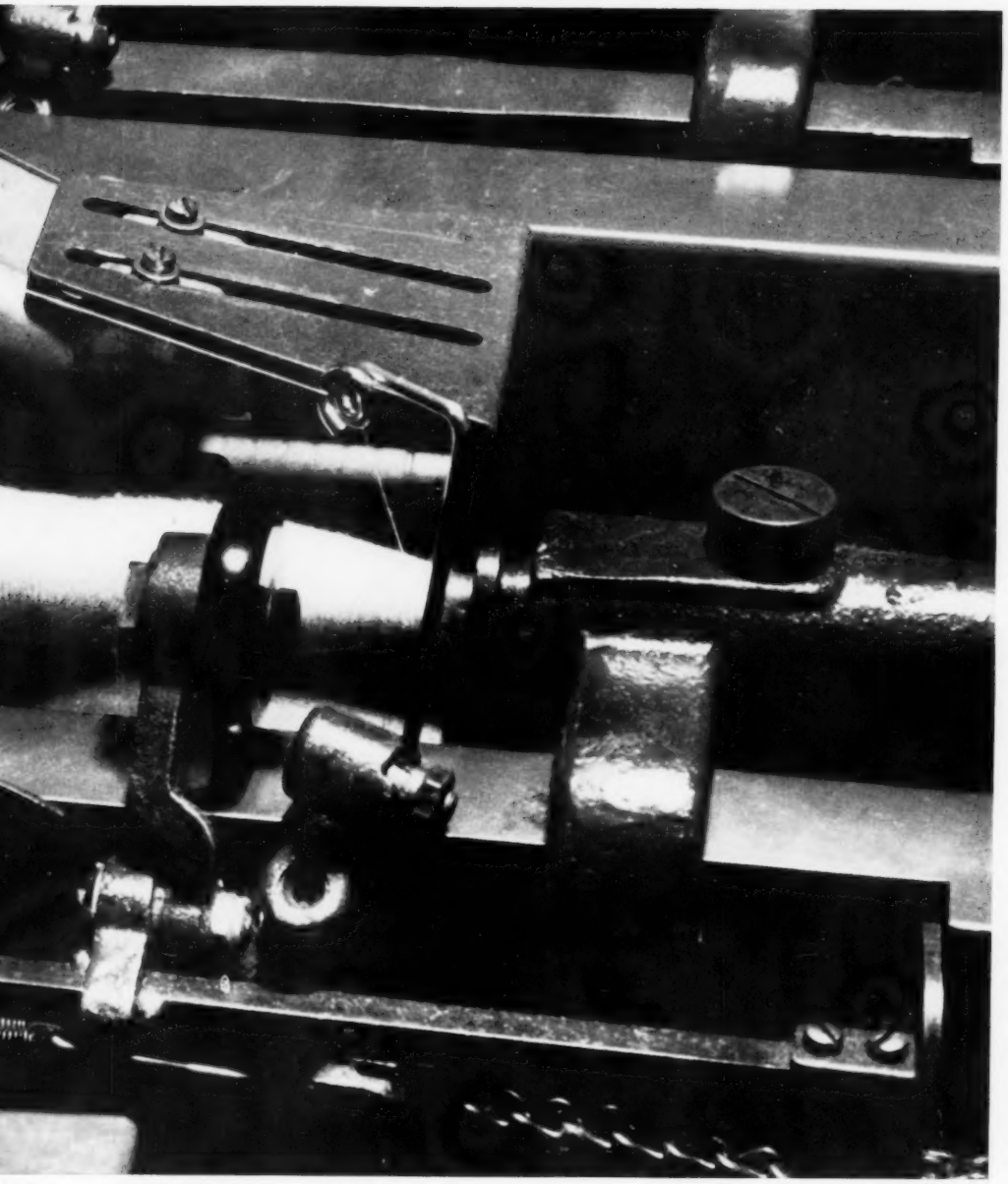


Textile Industries

26

Textil

eaving troubles



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Tear along this line to post in winding room

The men who operate the textile plants in Alabama traded know-how on

Preventing sloughed and kinky filling

Staff report

MORE than 200 representatives from 16 mills attended the annual spring meeting of the Alabama Textile Operating Executives on May 3. The meeting, held in Thach Auditorium on the campus of the Alabama Polytechnic Institute, Auburn, permitted the executives to air mutual problems in plant operations. *W. N. Scroggins* was on hand to conduct the forum of slashing. *Homer Roberts* led the weaving and supply discussions.

To complete the list of officers for the coming year, the following men were elected to the posts indicated: *Dwight Epperson*, general chairman; *Wendell Morriss*, vice-general chairman; *R. L. Pyle*, executive committee; *Howard C. Arnold*, executive committee; and *Virgil Redden*, executive committee.

TWIST INSERTED IN FILLING YARNS

Mill	Twist Multiple	Yarn Count	Turns per inch
B	3.75	3.25	6.75
	to	6.00	10.33
	5.75	17.00	16.79
C	3.75	14.00	13.96
	3.80	25.00	18.98
	4.25	43.00	27.91
D	3.60	7.25	10.30
	to	12.5	12.73
	4.00	19.00	16.71
E	3.25	8.00	9.30
	to	17.00	14.61
	3.60	21.00	16.59
F	3.50	7.30	9.49
	to	10.00	11.79
	4.00	20.00	17.23
G	3.90	42.00	24.00
H	3.45	7.50	8.84
		15.75	13.97
		25.75	19.73
I	3.48	3.25	6.38
	to	7.50	10.07
	4.03	12.00	12.95
J	3.14	5.00	7.21
	to	14.00	15.50
	4.25	13.00	15.02
K	3.58	6.00	8.73
	4.05	14.50	14.89
	4.08	20.00	18.25
L	3.35	7.00	8.86
	to	14.50	14.40
	3.74		
M	3.30*	11.25	10.50
	3.80	14.00	13.39
	4.28	21.00	19.49
N	3.60	13.86	13.21
		23.50	17.30
		34.50	21.50
O	**	4.80	7.23
		10.40	10.30
		15.80	14.61
P	4.30***	8.00	12.50
		12.80	15.50
		17.00	17.50

*3.90 *average.*
**A 3.40 *twist multiple is used on yarns from* 2.00s *to* 13.00s. *On yarns finer than the latter, a multiple of* 3.75 *is used.*
***4.30 *average.*

What is the best way to prevent sloughed filling? Give yarn number and speed of loom.

Mill A rewinds all filling on quillers and has no sloughing to report. *Mill B* experiences a similar result from quilled filling and further states that all filling processed there is conditioned on a machine built for that purpose.

At *Mill C*, when sloughing occurs, the offending looms are checked for proper harness timing, excessive power, correct shuttle boxing, filling tension, pick and stroke settings, worn pickers and leather, and humidity on the stored filling. The filling supply is checked to assure using the oldest filling first.

The procedure followed at *Mill D* to prevent sloughing is to control filling inventories to keep no more than an eight-hour supply on

ALABAMA MILL PRACTICE WITH MULTI-CYLINDER SLASHERS

Comparative Machine and Production Data

Mill	Prod. lb/hr	Cotton yarn count	Ends per set	Can pressure (psi)	Number of cans	Can width (")	Procedure for cooling yarns
D	950	9 15	1440 5040	28	4	57	Fan
E	1200	8 to 40	1952 to 6555	30	9	61	Fans
F	600 to 650	15	1700	60 (first 3) 35 (last 4)	7	60	None
I	1500*	2.65 to 15.00	1500 to 7784	30 to 40	11	66	Fan
O	1200 to 1500	8.00 to 21.00	1150 to 6500	35 (front) 40 (back)	9 and 11	60	Fan (paddle type)

*At 100% production

hand. Power is kept as low as possible; and care is exercised to build the bobbins correctly. Filling numbers run from 9s to 22s; and the loom speed is 178 ppm.

Mill E considers the filling lay on the quill, quill density, and quills of correct size to be of the utmost importance. The looms, furthermore, must be in good condition with true-running shuttles properly checked, and picking smoothly. With those factors in order the plant believes that the yarn numbers and loom speeds are not too important in preventing sloughing. The firm operates its looms at speeds from 158 ppm on 44" K cam looms to 172 ppm on 50" X-2 looms. The yarn numbers range from 5.5s to 30s.

At *Mill F* the filling is wound firmly with a medium-long build. The looms are operated with a minimum of power, are made to check the shuttle properly, and the filling is not allowed to dry.

Wind a tight bobbin, keep the shuttle spring tight, and use a minimum of power are sentiments of *Mill G*.

While stating that loom settings can cause sloughing, *Mill H* reports that the best method of preventing that problem is to have the spinning room prepare bobbins with the correct tension, build, and wind.

Standard tensioning methods and loom settings are the preventives *Mill I* uses.

With the looms set correctly *Mill J* finds that monofilament yarn loops in place of bristles and fur are helpful. The firm uses five loops of 50-pound test filament on 5s to 9s filling and five loops of 40-pound test on 9s to 15s yarn.

Mill K lists six items to be checked: (1) see that all spinning rings are in good condition; (2) see that all shuttles are bristled correctly; (3) see that all strokes are set the same correct length; (4) use travelers heavy enough to make good, firm bobbins; (5) operate looms with the least power possible; and (6) see that all pickers are paralleled and shuttle boxes and check straps are set correctly. Yarn counts range from 10s through 20s cotton and rayon. The loom speeds are 163 ppm for X-2's and 155 ppm for XP's.

A formula is given by *Mill L*: Get all the power possible off the left end of the loom and put enough heel spring on the picker stick to pull the sticks to about one inch from the lay ends. Then, if the loom still sloughs filling, add a little power to the right end of the loom. The firm operates its looms at 192 ppm on filling numbers from 4.5s to 15.5s.

The formula from *Mill M*: Take all possible power from the loom and make sure that the pick and stroke are set correctly. In this plant five nylon monofilament loops (30-pound test) are used in X-2 looms running at 192 ppm. The yarn counts are from 9s to 28s.

Loom power and filling build are the points *Mill N* watches to prevent sloughing.

More than one factor are given as causes at *Mill O*, and the firm uses this list of conditions to be checked whenever sloughing appears excessive: (1) good quills with good, deep grooves; (2) proper build on the butt and taper of filling; (3) yarn wound tightly on quill; (4) minimum power; (5) proper shuttle boxing; (6) temperature and humidity within proper limits; and (7) proper shuttle bristling. The plant uses filling numbers from 2.50s to 21.00s.

In running numbers from 8s to 17.80s at a loom speed of 172 ppm, *Mill P* winds filling tightly on the quill and experiences little or no sloughing.

Kinky Filling. One multipart question asked for plant discussions on methods of controlling kinky filling and led with:

a. Do you condition your filling?

To this question eleven plants answered "No." The remaining five plants, "Yes." Of the latter group one firm steams one filling number at a time for a period of 15 minutes. Another plant conditions heavier fillings only.

b. Do you have temporary storage for a predetermined time before the filling is placed in the loom?

Thirteen of the plants do not. The remaining three have some such provision. *Mill B* stores it in a room under humidity conditions practically the same as are found in the weaving room. *Mill K* stores it in the weaving room for 16 hours. *Mill P* stores it for approximately four hours prior to inserting it in the magazines.

For twist data on filling yarns, see table on preceding page.

Truck trailer closes off door opening, excludes cold air from warehouse during winter.

Truck sets its own dock height

Automatic dock ramp leveling device makes use of fork lift trucks easier and improves mill's safety record

Staff prepared

Exclusive

NINE adjustable dockboards are in operation at Rock Hill Printing and Finishing Co., Rock Hill, S. C., with satisfactory results, and present plans call for 19 additional installations in the future.

The automatic dock ramp leveling device is truck-activated and adjusts itself to the incoming truck bed without the use of any operating control or adjustment. The instant a truck contacts the dock, the dockboard automatically adjusts to the truck bed.

The new automatic adjustable ramps in the warehouse areas have been found safe, trouble-free, do not show any appreciable wear, and are adequately adjustable for different carrier levels. Fork lift trucks are used in this plant; therefore, it is desirable to have low pitch loading docks, which are provided by the adjustable dockboards.

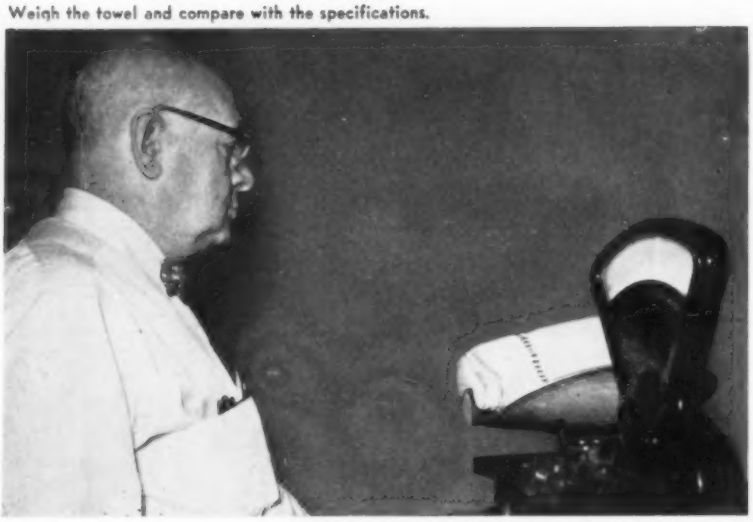
Formerly, accidents were more commonplace than they are now. Fingers were pinched, and legs were injured in handling half a million pounds of cargo each day. There are about 26 trucks loaded daily, and the adjustable dockboards save time by automatically and instantaneously adjusting to truck loading height. Also, when a truck trailer is backed up to the dock, the door opening is closed, thereby excluding cold air entry into the warehouse during the winter months.

The ramp is full width, and slope is negligible. Other ramps tried here were small and with larger difference in elevation which sometimes precluded use of fork lift trucks. This condition also made manual truck movements more difficult.

Truck height varies considerably, depending upon truck wheel size, and bed height varies among different trucking firms; therefore, the 24-inch adjustment on the docks in use here has been found among the more indispensable time savers, according to J. A. Aycock, plant engineer.

Automatic dockboard leveling device is truck activated, adjusts itself to bed height of truck instantly, with no manual operation.

Weigh the towel and compare with the specifications.



How to

by T. Hargreaves
Exclusive

FREQUENTLY a selling house will submit a fabric sample to several mills for price quotations. In shopping for the lowest price, the prospective buyer often does not indicate the origin of the sample, nor does he indicate the identity of or the number of the bidding plants.

Such conditions are standard when business is governed by a "buyer's market." Each mill is well on its own in the process of analyzing the fabric and arriving at a cost figure for its production.

Fabric analysis is always a painstaking task. If the fabric should be a terry towel, the job is more complicated by the "third dimension" of the fabric. The terry weave obtains its third dimension by the addition of the pile threads.

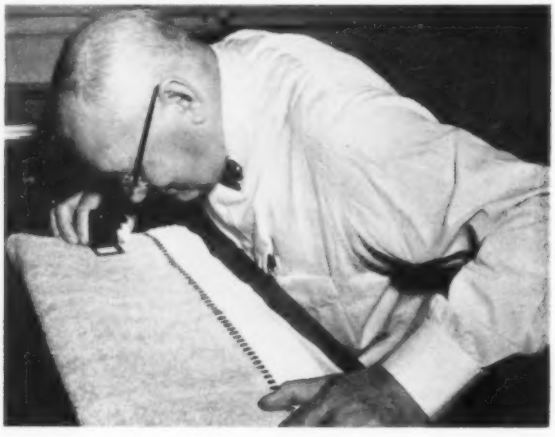
In contrast, flat woven fabrics such as sheetings may be referred to as "two-dimensional." The latter contain only warp and filling threads.

It is quite customary to receive

Measure the width and length of the towel. Additional care and judgment are required when the sample has been used.

Remove the pile ends from a 1¼" square. This is done by cutting two lines of terry loops to outline the top and bottom of the square. Two other lines are cut to form the sides of the square.

The loops are then picked out of the area outlined. Examine this area with a pick glass to determine the ground weave, picks and ends per inch, reeding plan, and if loops are single or double.



analyze terry fabrics

from governmental institutions or large store sources, both of whom may pride themselves on the efficiency of their testing methods, a printed data sheet containing specifications to be met by the manufacturers. Yet those specifications ignore the true relationship that the "third dimension" (the terry loop) has to the structure and stated weight of the particular terry fabric on which a quotation is requested.

This lack of complete information means that it is possible to vary from the printed specifications, and yet have the width, length, weight, strength, and other properties fully up to standard.

Under these conditions it is essential that, in addition to the printed specification, a sample, full-size, unlaundered towel be sent to the company invited to bid. Otherwise the true fabric construction is likely to be misinterpreted, resulting in a possible wrong price.

The receipt of a terry fabric from civilian, governmental, or institutional trade for which bids are invited calls for very careful analysis. A true analysis enables the costing department to arrive at a true price; and the manufacturer, knowing the true particulars, to produce the correct fabric.

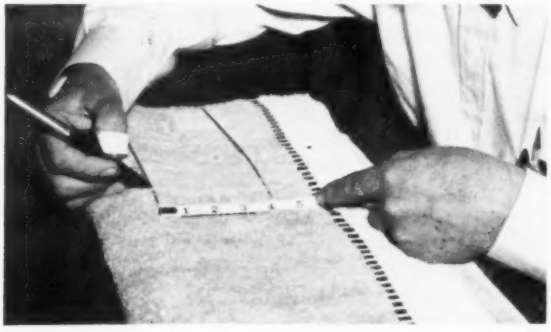
If the weight of the finished fabric is higher than the prescribed weight, it is very unlikely that the buyer will complain. It is also unlikely that he will volunteer to pay for the excess weight. On the other hand, if the weight of the finished fabric is much lighter than the prescribed weight, then it is likely that the plant will receive complaints and, possibly, a compensation claim. Total rejection may even occur.

To better illustrate the manner in which a towel is analyzed, let us take apart a hypothetical towel as we proceed and record our findings as we go along. The towel has been bleached and left undyed.

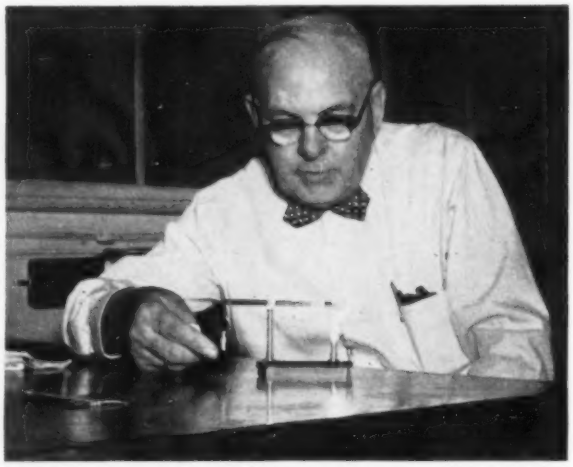
Assume that among the specifications the buyer submitted is a clause allowing a moisture regain of 5.0% and that the towel is to be made of all-cotton yarns. The towel submitted as a sample is described in the article as we proceed. To render our analysis to a system, let us use the following outline:

1. Weigh the towel.
2. Ascertain the width and length.
3. Remove the pile ends from a $1\frac{1}{4}$" square.
4. Examine the exposed ground in the square to determine:
   a. The exact number of ends per inch in the ground.
   b. The exact number of picks per inch in the ground.
   c. What the ground weave is (weaves other than three-pick terry are sometimes used).
   d. The reeding plan.
   e. Whether single or double loop construction is used.
5. Determine the number of ends in the body of the towel by multiplying the ends per inch by the width of the towel body (this does not include selvage ends).
6. Determine the number of ends in the selvages by actual count. Remember to double the number of ends if only one selvage is counted.
7. Determine the length of the pile loops by removing and measuring a number of them.
8. Calculate the pile-to-ground ratio from the figures found in Step 7.
9. Measure the lengths of the nonterry bands woven across the width of the towel.
10. Calculate total picks.
11. Determine the size of the pile let-off gear.
12. Calculate reed needed and cloth width in reed.
13. Determine yarn counts.
14. Adjust yarn counts to correct for age or condition of the

Using a darning needle to find the rows, ink mark two rows of pile loops four inches apart. Cut these loops an inch behind the marks, remove them, and proceed to measure the distance between the ink marks. If this proves difficult, remove only two inches.



Using a square of cloth large enough to give the yarn lengths needed for sampling, remove individual ends from the body of the



fabric and proceed to weigh the yarn. There are several balances made for this work. Adjust yarn counts for weight lost in bleaching.

yarns in the sample towel.

WEIGHING the sample is the first step in the procedure for analyzing a terry towel. Use very sensitive scales so that accurate results can be obtained. Compare the weight of the sample with the specified weight. If the weight of the sample is within the tolerance permitted, proceed with the analysis; if it is not, then request another sample. *(Note: Under certain conditions it may be desirable to go ahead with the analysis and plan some adjustment in the construction of the fabric to compensate for the weight differential.)*

The specifications include an allowable 5% regain when determining the weight of the towel. Place the sample in an oven and weigh it when bone-dry. Then add the percentage of moisture permitted to the bone dry weight of the towel and compare the result with the specified weight.

From the sample:

Weight per towel as received—0.533 lb.

Bone dry weight of one towel—

Weight per dozen, finished bleached state—6.396 lb.

0.508 lb.

To the bone dry weight of the sample, add the allowable 5% moisture regain:

$$0.508 \text{ lb} + 0.05 \ (0.508) = 0.533 \text{ lb each}$$

This agrees with the weight of the towel as received.

The amount of weight loss due to the bleaching operation averages about 8% (from loom weight). This figure is drawn from experience. It is now possible to approximate the weight of the sample towel as it came from the loom:

$$\frac{0.533 \times 108}{100} = 0.5756$$

$$12 \times 0.5756 \text{ lb} = 6.9072 \text{ lb per dozen}$$

THE WIDTH and length of the sample towel are obtained to see how these measurements compare with those specified.

Sometimes a towel, washed possibly hundreds of times in a commercial laundry, is provided for analysis. Laundries are just as "production conscious" as are textile plants; consequently, to avoid reruns they are inclined to use higher temperatures and stronger cleaning agents in their operations than are normally used in a bleachery.

The dimensions and weight of a used towel like this may have undergone considerable change. So the analyst must look for them in the specifications furnished. Or, if they are not stated, then he must rely upon his experiences in estimating what the original measurements and weight were.

From the sample:

Length—44″ (including hems)

Width—22″

Frequently the yarns in such a towel are so tender that it is a difficult task to remove them from the fabric to test for length of loop, count, etc. Here again the analyst must draw from his experience in reproducing the sample.

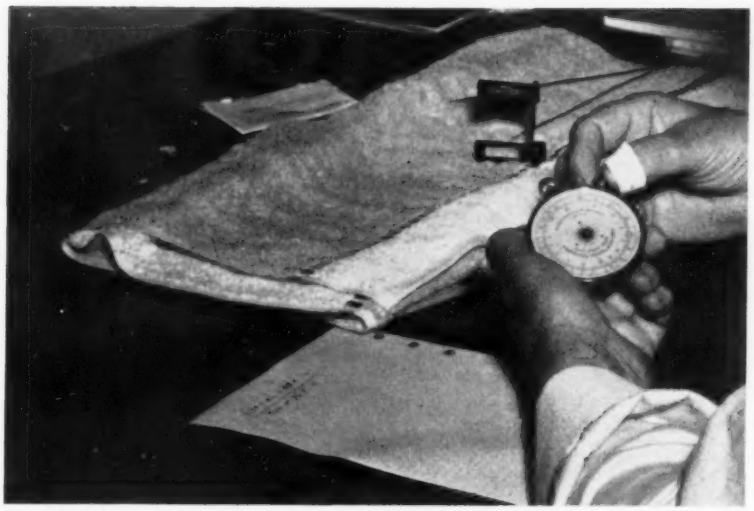
REMOVE the pile ends from a 1¼″ square of towel as follows:

With a pair of small scissors cut the tops of a line of terry loops on the face of the towel for a distance of 1¼″. Then move warpwise down the fabric to a point directly below this and cut the tops off another line of terry loops, also for a distance of 1¼″. Now turn the towel over and repeat this operation in the corresponding position on the back. Then pull out all the pile ends in the square from the face and back of the towel.

Examine with a pick glass the ground and filling yarns now fully exposed in the 1¼″ square area from which the pile ends have been removed, to determine:

1. The exact number of ends per inch in the ground
2. The exact number of picks per inch
3. What the ground weave is (weaves other than three-pick terry are sometimes used)
4. The reeding plan
5. Whether single or double loop construction is used

The total ends in the body of the towel are determined by multiplying the number of ground warp ends per inch by the width of the towel in inches (excluding selvages). Then the total ground ends in the selvages are obtained by counting those in one selvage and multiplying by two. Add the results to get the total ground ends in



From the observed data calculate the total ends, pile-to-ground ratio, total picks, pick pile let-off gear, yarn counts, and weight per dozen towels.

the towel (selvage ends plus body ends).

While counting the selvage ends, observe whether the yarns are the same as those used in the body. If a different yarn is found in the selvages, make a note to determine the size of it later while testing other yarns in the fabric.

If the towel is of single loop construction, then the number of pile ends in the fabric is equal to the number of ground ends (excluding selvages); if double loop, then there are twice as many pile ends as ground (excluding selvages).

From the sample:

1. Ground ends per inch—33½
2. Picks per inch—48
3. Ground weave—3-pick terry
4. Reeding plan
   a. One end of Body and one end of Terry per dent
   b. Selvage—4 ends per dent

TO DETERMINE the length of pile yarn used per inch of woven terry cloth, follow this procedure:

With a darning needle hold up a row of terry loops and use a fountain pen to mark these raised loops. At a point exactly 4″ above or below (lengthwise of the towel), raise and mark another row of terry loops. Then at a point about one inch above and below the upper and lower marks respectively, cut with scissors the marked rows of terry loops.

Now pull one of the pile ends out of the cloth and measure the distance in inches between the two ink spots on that particular end, being careful not to stretch the yarn too much. In the sample this distance is 18″. Then 18″ of pile yarn is required to weave 4″ of cloth.

Therefore, the pile loop ratio is $\frac{18}{4}$ —or 4.5. This figure is not indicative of the height of the loop, but it is the one used when calculating the weight of the fabric. Divide the length of the pile ends by 4 to determine the loop pile ratio.

From the sample:

Pile ratio—4.5

Some tightly woven terry cloths resist the removal of the pile ends. When this is encountered, try pulling out 2″ instead of 4″.

In thin, low-loop, lightweight terry fabrics, it is best to test over a longer length, say 10″. This provides an accurate measurement of pile loop ratio.

AT EACH END of the towel a ⅜″ wide hem of nonterry fabric is found. To make one of these hems, 3 x ⅜″ or 1⅛″ of nonterry fabric is required; so for the two hems 2 x 1⅛ or 2¼″ of nonterry fabric must be provided.

As is quite often the case, the sample terry towel is woven with bars of nonterry near each end to serve as borders. There are two ⅜″ bars and one ¾″ bar of nonterry fabric at each end of the sample towel. This totals 2 (⅜″ plus ⅜″ plus ¾″) = 3″.

From the sample: The amount of nonterry cloth is 3″ in bars and 2¼″ in hems, or a total of 5¼″.

Frequently the nonterry borders are double-faced, long-floating, fancy weaves, often with three times the usual number of picks. When this is encountered, the weave, picks per inch, and other construction details essential for reproduction of that particular portion of the towel must be determined separately.

When the weave changes from nonterry to terry, it is necessary to retard the take-up gears on the loom to prevent formation of thin places in the fabric. For example, in the towel with the three bars at each end mentioned above the same weave is used for the terry and nonterry portions, the only difference being that the loops are not formed in the nonterry.

Allow six additional picks for each weave change, seven of which take place in the production of this particular towel. Then 7 x 6 or 42 additional picks are required to prevent thin places when the weave changes. The finished towel being analyzed is found to have a pick count of 48 and the cut length before hemming is 45½″. Then the total number of picks in the towel is:

$$(48 \times 45\tfrac{1}{2}) + 42 = 2226$$

SINCE the cut length of the finished towel is 45½″, hemmed length 44″, and the towel had been bleached after weaving, what then was the length of the towel when it came from the loom? (Terry fabrics are not normally stretched in finishing. On the contrary, since they are usually dried in a loop dryer, they shrink.)

Experience has taught that an allowance of 3″ over the hemmed length of 44″ should be made for shrinkage in finishing; 1½″ of this is for hemming and 1½″ for actual shrinkage. The ⅜″ hem at each end was made from 1⅛″ cloth. 1⅛″ — ⅜″ = ¾″ loss in length × 2 hems = 1½″ loss in length due to sewing ⅜″ hems. So, the towel being analyzed was 47 inches long when it came from the loom.

From the sample: Since 5¼″ of

this fabric is nonterry,

$$47'' - 5\tfrac{1}{4}'' = 41\tfrac{3}{4}''$$

is terry.

NOW there is sufficient information available to determine the size of the pick gear required to reproduce the sample towel. Since there are 48 picks per inch in the $45\frac{1}{2}''$ long (before hemming) finished towel, which in its loom state was 47" long, the number of picks per inch to be inserted at the loom is determined as follows:

$$\frac{48 \times 45\frac{1}{2}}{47} = 46.47 \text{ picks per inch}$$

Consequently, a 46-tooth pick gear will be required. Now it is possible to determine the size of the let-off gear required to produce the 4.5 pile-to-ground ratio.

THE CIRCUMFERENCE of the let-off roll on the C&K C-5 terry loom is $8\frac{3}{4}''$. This roll is turned by a ratchet and pawl on each third pick of the three-pick terry weave cycle. Assume that the ratchet turns two teeth at a time on that third pick. Then:

$$8\tfrac{3}{4}'' \times \frac{2}{3} = \frac{70}{12}$$

Now multiply the number of teeth in the pick gear by the numerator as follows:

$$46 \times 70 = 3220 \qquad (1)$$

Then multiply the required loop ratio by the denominator as follows:

$$4.5 \times 12 = 54 \qquad (2)$$

Finally divide the product of equation 1 by the product of equation 2 as follows:

$$\frac{3220}{54} = 59.63 \text{ or } 60\text{-tooth let-off gear}$$

Now verify this by multiplying 60 x 12 and dividing the product 720 into 3220. The answer is 4.47, a figure close enough for all practical purposes to the required loop ratio of 4.5. So when weaving the terry portion of the towel, use a 60-tooth let-off gear moved two teeth on every third pick, or a 30-tooth let-off gear moved one tooth on every third pick.

The author uses this 4.47 ratio in his weight calculations.

NOW determine the number of dents per inch in the reed and the width at the reed required to reproduce the sample being analyzed.

From the sample:

The finished towel is 22" wide, including selvages. Each selvage is $\frac{1}{4}''$ wide; consequently, there are $21\frac{1}{2}''$ of terry cloth and $\frac{1}{2}''$ of selvages in the 22" wide bleached towel.

Also, there are $33\frac{1}{2}$ (average) ground ends per inch in the sample. Then there are $33\frac{1}{2} \times 21\frac{1}{2}$ or 720 ground ends in the terry part of the towel. Furthermore, since single loop construction is utilized in the sample, there are 720 pile ends. Add to the 720 ground ends the 32 ends in each selvage and the total is 784 ground ends and 720 pile ends.

On this basis, for 720 ground ends plus 720 pile ends drawn into the reed, two ends per dent for 720 dents will be required. For the 64 selvage ends drawn in four ends per dent, 16 dents will be required. Or, a total of 736 dents will be required. However, experience has shown that a 22" wide finished towel is $2\frac{3}{4}''$ wider when it comes from the loom; also, the width of yarn at the reed is about $1\frac{1}{2}''$ greater than that of the woven cloth.

So, since the finished towel being analyzed is 22" wide, the loom state width is estimated to be $24\frac{3}{4}''$ and the width of yarn at the reed $26\frac{1}{4}''$.

Now to determine the number of dents per inch required in the reed, divide the 736 total dents needed by $26\frac{1}{4}''$ estimated width in reed. The answer is 28.04 dents per inch. Therefore, a reed with 28 dents per inch will be required to weave a reproduction of the sample towel.

It is now possible to determine exactly what the width at reed will be. Divide 736 total dents needed by 28 dents per inch and the result is 26.285 inches.

AT THIS point in the analysis all of the construction details except the size of the ground warp, pile, and filling yarns are known.

There are many different types of instruments available for determining the counts of yarn from small samples of cloth. The type used by the author is a small lever balance with which a template is provided for convenience in cutting test specimens.

Individual yarns are withdrawn from the fabric sample, cut to template length, and suspended on the hook provided on the balance. The number of individual yarns required to raise the lever to the horizontal balance position is indicative of the yarn size; i.e., if 14 threads are required, then the yarn is 14s.

If a yarn balance of this type is utilized, then the next step taken in the towel analysis is to cut a square of cloth from the sample towel, the sides of which are equal to the length of the template, and proceed with the testing for yarn counts.

The fact that the cloth being analyzed has been bleached must be taken into consideration when determining yarn counts. For instance, a 14s grey yarn used in weaving a fabric will probably test as 15s in the bleached condition.

From the sample:

Ground yarns—24s/2

Pile yarns—14s/1

The balancing of the calculated weight with the desired loom state weight will usually indicate where adjustments should be made.

WITH THE construction details which now have been determined, it should be possible to weave a cloth that, when bleached and hemmed, will meet specifications.

Whether a manufacturer spins his own yarns or buys them from an outside source, he should determine the actual counts of the yarns going into his fabric.

No better method can be found for determining this figure than by multiplying the number of ends on a warper beam by the known length and dividing by 840 multiplied by the net weight of yarn on the beam. Take for example an 18,000-yd beam of 14s yarn, containing 360 ends and weighing 553 lb net. Then:

$$\frac{360 \times 18{,}000}{840 \times 553} = 13.95 \text{ actual count.}$$

This is a reasonable tolerance from the standard 14s count. If, however, the difference up or down is as much as 2% out, then due allowance of that fact should be made in the calculation for loom

state and finished cloth weights.

Usually the difference from calculated loom state cloth weight to finished bleached cloth weight per dozen is about 8%. This may be as low as 6%, or as high as 10%, if yarn counts vary from 2% on the heavy side to 2% on the light side.

Therefore this variable 4% factor could make a difference in cost. It pays to check your spinning counts at the warper, where you can get the best average, because there are many ends, of a very long length, of a known weight, to give us the correct average counts, by a simple method of calculation.

(Note: Sometimes sample towels have figured terry designs. The analysis of such designs requires a knowledge of terry weave design, and is beyond the scope of this article.)

The final proof of an analysis is in the reproduction of the product analyzed. At this point of the analysis the fabric has been taken apart—literally. It must be put together on paper and finally, on the loom. If the fabric checks out under the slide rule, then the final move is up to production.

With the information we have obtained to this point, let us recreate the fabric on paper and check it against the weight of the sample.

RECAPITULATION

Sample towel particulars (Bleached finish, but not laundered)

1. Weight 0.533 lb for one towel, or 6 9072 per dozen (loom weight).
2. 22″ x 44″ including ¼″ selvages and ⅜″ hems.
3. 22″ x 45½″ cut length after bleaching.
4. Ground ends per inch 33½—Ground 24s/2 all cotton
5. Pile ends per inch 33½—Pile 14s/1 all cotton
6. Total per inch 67
7. Terry Loop Ratio—4.5 (single loop structure)
8. Picks per inch—48 (14s/1 all cotton)
9. Total picks in towel—2226.
10. Selvages—32 ends of 24s/2 cotton yarn, same weave as ground.

Weaving particulars to match the sample particulars.

1. 24¾ inches wide x 47 inches long x 6.9072 lb per dozen loom state
2. 720 ends 14s/1 pile, all cotton, carrying 1½% size
3. 784 ends 2/24s ground, all cotton, no size required. 32-end selvages
4. 28 dents per inch reed
5. 26.285 inches for width of yarn in reed
6. 46 teeth in pick gear
7. 60 teeth in let-off gear moving 2 teeth at a time
8. 4.47222 terry loop ratio
9. 5.25 inches of non-terry } 47″
   41.75 inches of terry }
10. 3-pick weave
11. Single loop structure
12. 1 pile, 1 ground, per reed dent. (2 ground ends per heddle eye in selvages and 4 selvage ends per reed dent)

(Note: All these calculations are time consuming. The use of a slide rule is recommended to save much of this time. There are small pocket sized types of slide rule, and also large desk type models. The author uses a pocket sized watch type of slide rule, which is circular in construction and operation, has two hands like a watch, is very easy to learn and operate, and is accurate to about three places of decimals. It is easily carried in one's pocket, and being in a leather case, is not liable to breakage.)

Formula for finding the weight of pile yarns in a dozen towels:

$$\frac{\text{No. ends} \times \text{loop ratio} \times \text{inches of terry} \times \text{towels per dozen}}{\text{hanks} \times \text{inches per yard} \times \text{yarn counts}} = \text{weight in pounds of pile yarns in a dozen towels.}$$

Substituting in the formula:

$$\frac{720 \times 4.5 \times 41.75 \times 12}{840 \times 36 \times 14} = 3.8342$$

Formula for finding the weight of pile yarns in the nonterry portions:

$$\frac{\text{No. ends} \times \text{inches of nonterry} \times \text{contraction} \times \text{towels per dozen.}}{\text{hanks} \times \text{inches per yard} \times \text{yarn count}}$$

Substituting in the formula:

$$\frac{720 \times 5.25 \times 1.06 \times 12}{840 \times 36 \times 14} = 0.1136$$

Total weight of pile yarns:

$$3.8342 + 0.1136 = 3.9478 \text{ lb}$$

Add 1½% size based on weight of pile yarns:

$$3.9478 \text{ lb} \times 0.015 = 0.0592$$

Make your plans to go to the
GREENVILLE SHOW
20th Southern Textile Exposition
Textile Hall Greenville S. C.
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For news about the show
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Total weight of pile yarns and size: 4.0070

Formula for finding the weight of ground yarn in a dozen towels:

$$\frac{\text{No of ends} \times \text{loom length of towel in inches} \times \text{contraction} \times \text{towels per dozen}}{\text{hanks} \times \text{inches per yard} \times \text{yarn counts}} = \text{weight of ground yarn per dozen towels.}$$

(Note: Ground yarns, being plied, are not sized.)

Substituting in the formula:

$$\frac{784 \times 47 \times 1.06 \times 12}{840 \times 36 \times 12} = 1.2916$$

Formula for finding the weight of filling yarn per dozen towels:

$$\frac{\text{Total picks} \times \text{cloth width in reed} \times \text{towels per dozen}}{\text{hanks} \times \text{inches per yard} \times \text{counts}} = \text{weight of filling yarn per dozen towels}$$

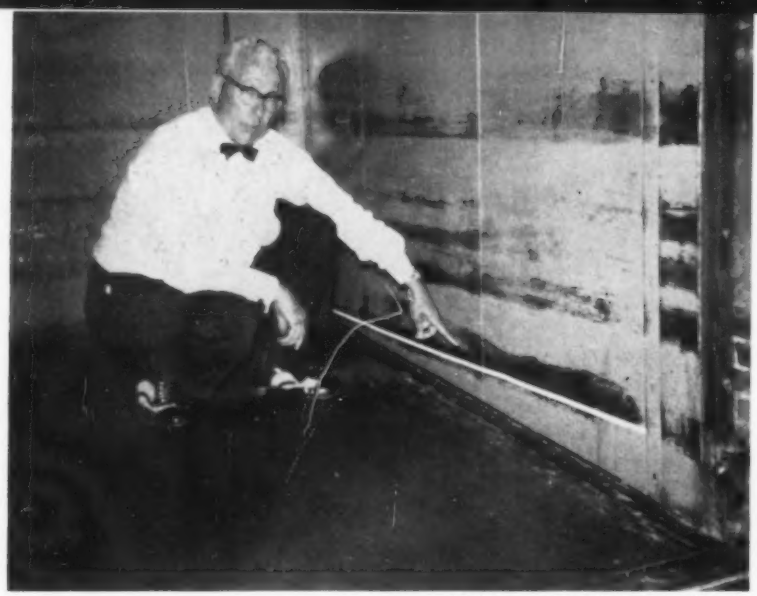
Substituting in the formula:

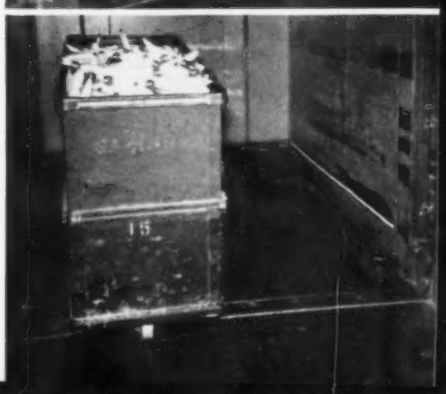
$$\frac{2226 \times 26.285 \times 12}{840 \times 36 \times 14} = 1.660$$

Total calculated weight of one dozen towels as delivered from the loom: 6.9586 lb

(6.9586 lb less 0.5566 lb for 8% loss in weight due to bleaching = 6.4020 lb per dozen finished bleached state, which is very comparable to 6.396 lb per dozen of the original sample, taking into consideration possible variations in actual yarn counts.)

The small difference between the weights suggests that we will be justified in ordering a trial run based on the above data.





Photos courtesy Otis Elevator Co.

Look! The floor tilts....

Tennessee mill's freight elevators unload themselves

■ MATERIALS handling costs are considerably less at Bemis (Tenn.) Cotton Mill since the two freight elevators (one in each end of the four-story plant) were equipped with auxiliary floors or platforms that tilt at the landings to which the cars are sent as shown in the photo above. With this arrangement the elevators automatically unload themselves, resulting in a considerable saving in labor.

In this mill, like many others built at the same time, the spinning room is located on the fourth or top floor and the weave room on the first or ground floor. So, filling must be sent from the spinning room down to the weave room and empty quills returned to the spinning department. It is for this purpose that the two elevators are used.

Asked by the mill's management for a way to reduce the cost of this operation, Otis Elevator Co. engineers offered as a solution the auxiliary floor which is hinged at the front over the main car platform and automatically tips at a landing to roll the boxes out of the car into a restricted area in front of the elevator.

The shaftway entrances are equipped with power operated biparting doors and the car with a power operated car gate. A full set of dispatching buttons and call buttons are provided at each landing to provide full multi-button operation similar to that used on dumbwaiters.

Sequence of Operation. Refer to the strip of photographs at the right to see how the elevators work.

When a doffer in the spinning room gets a full box of filling, he takes it to the elevator and presses the "call" button for the fourth floor. If elevator is already there, the hoistway doors and car gates open, and the doffer loads the box into the car. He then closes the power-operated doors and gates by means of the "door close" button outside (top photo).

Next, he dispatches the car to the first floor. When the car arrives, the doors and gates open, and the platform tilts and rolls the box out of the car (see second, third, and fourth photos).

Boxes of bobbins are returned to the fourth floor in the same manner.

Note that the platform tilts only at a landing to which it is dispatched, not at one where it is called.

An important feature of the elevator is the automatic self-leveling. Elevator and floor platforms must be accurately aligned because of the small casters on the boxes. Otherwise, free roll-off would be affected.

After the car arrives at a landing and discharges its load, the doors automatically close so that the car will be available for service.

The power-operated gate is provided with a reversing safety edge and features a sequence operation which requires the car gate to close before the hoistway doors close.

Tips for making a saturator for non-wovens

■ SATURATION of the non-bonded web with a binder is a critical part of the continuously bonded type of non-woven fabric manufacturing operation in which the webs are generally run through an impregnating bath for application of the bonding material and then the excess is removed by squeeze rolls. The most perfectly formed web can easily be distorted by improper handling.

According to reports, most producers of non-wovens have had to design their own bonding equipment, in the absence of commercially available equipment. However, standard equipment is now becoming commercially available from several manufacturers.

The following suggestions (abstracted from an article in the current issue of "Rubber Development," a publication printed and distributed in this country by the Natural Rubber Bureau of Washington, D. C.) may prove helpful to non-woven fabric manufacturers utilizing latex binding materials.

Desirable Mechanical Features of Latex Impregnator. Refer to Fig. 1 for cross-section drawing showing path of material through the latex impregnation equipment of one non-woven fabric producer.

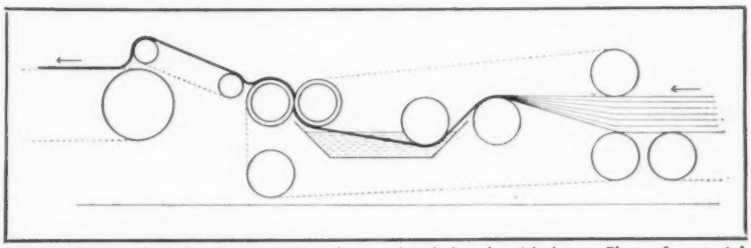


FIG. 1. One method for impregnating the non-bonded web with latex. Flow of material through the impregnator is from right to left. Note the unbonded webs at the left from the web forming equipment are consolidated by the rolls, immersed in the latex in the tray (center), squeezed by the rolls above the tray to remove excess latex, and deposited onto a conveyor for delivery to the drying unit.

When latex is involved, some care must be taken in selecting the materials of construction with which the latex will come into contact. Materials containing copper and manganese must be avoided, and ferrous materials should be protected to prevent corrosion, particularly as the latex is likely to contain ammonia.

Stainless steel is preferred but aluminum alloy is acceptable if it contains no copper.

Alkali-resistant paint is satisfactory on main structures if adequate steps have been taken to prevent rusting initially by using a good primer.

It is essential that the bath and drip tray can be readily removed, and that the whole machine can be easily cleaned.

Equipment should be frequently cleaned in order to minimize corrosion and prevent contamination.

Support for Unbonded Web. The support for the unbonded web must (1) allow liquid to pass through without resistance, (2) have adequate strength when wet, (3) resist adhesion to the web, (4) have no effect on, nor be affected by, the latex, and (5) be flexible.

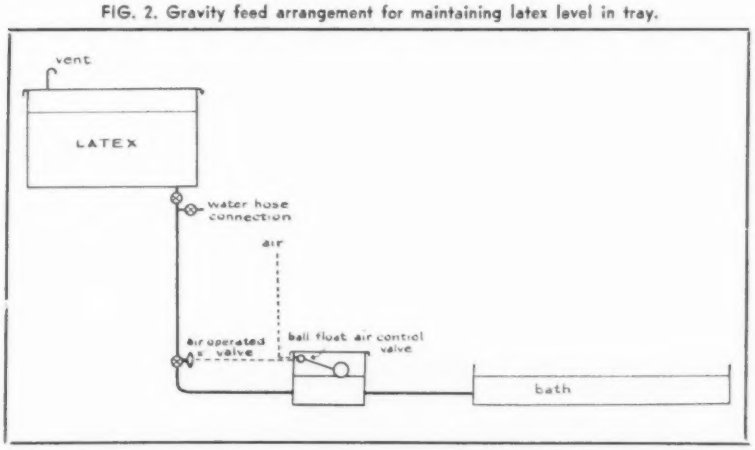
These requirements can be met by stainless steel wire mesh formed into an endless belt. Joining the ends of the mesh must be carefully done so that there is no blanking of the mesh and so that there are no wire ends to catch the web. Any brazing or similar process must not include materials which are unsuitable for use with latex.

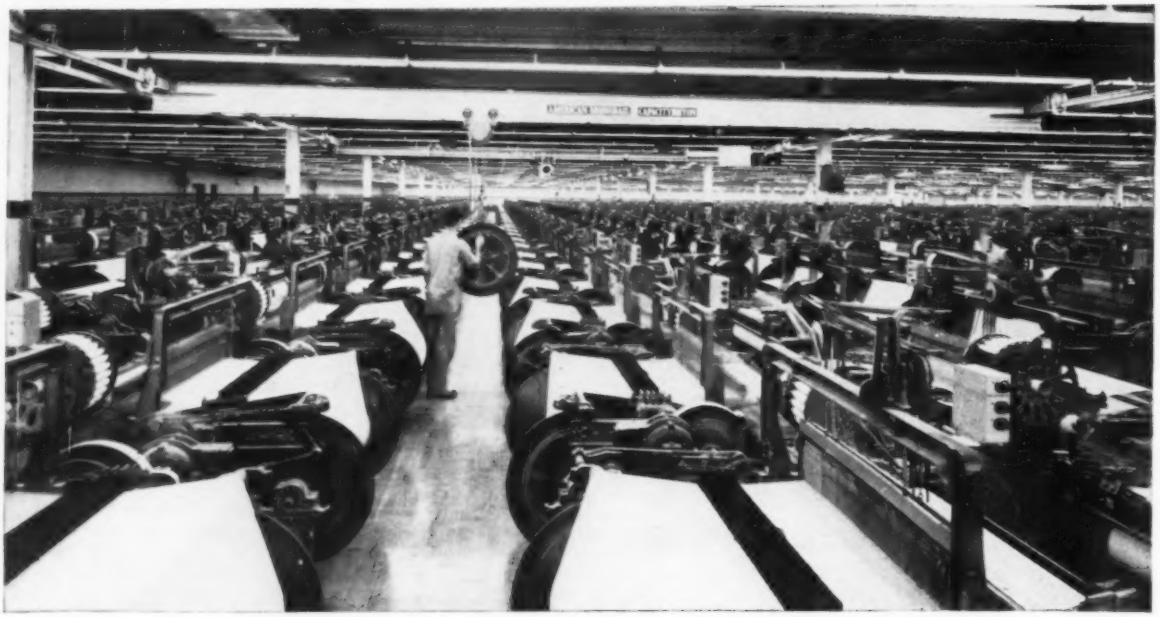
Equipment design should permit easy replacement of the endless mesh carrier in the plant. Also, tension in the carriers must be readily adjustable at both sides to prevent tracking sideways. Automatic control of the tracking tendencies of the mesh carrier may be necessary.

Squeeze Rolls. Rubber that is at least ½" thick should be used to cover the squeeze rolls. Efficiency of squeezing out the liquid is affected by the hardness of the rubber used. One roll at least should be of a low hardness value.

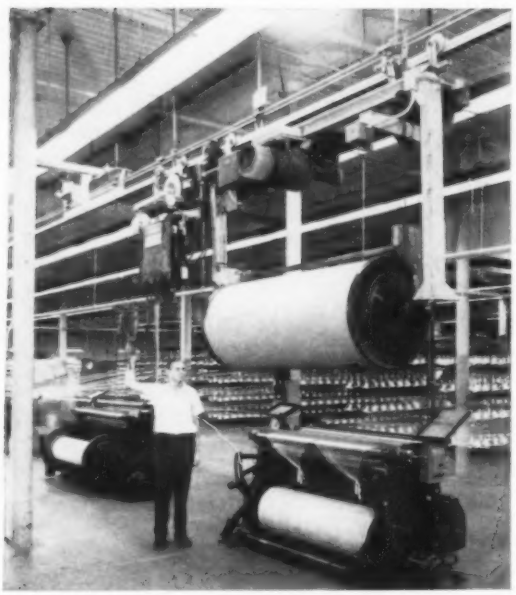
To prevent splitting and distor-

FIG. 2. Gravity feed arrangement for maintaining latex level in tray.





AMERICAN MONORAIL



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tion of the saturated web as it passes through the rubber rolls, pass the mesh carriers through the nip of the squeeze rolls. Squeeze pressure must be precisely controlled either by hand-operated screws or pressure cylinders at each end of one of the rolls.

It is recommended that the squeeze rolls be geared together and that the carrier should not be used to drive the other rolls—an independent chain drive is better.

Consolidation of the bat must be gradually achieved before deforming it around the rolls and into the bath. Modifications of the relative positions of the rolls may be necessary to suit any particular installation.

The Latex Supply. The compounded latex can be piped to the impregnation bath from a supply tank, which, in turn, is maintained with the latex compound from a mixing vat in which any necessary compounding, mixing, and dilution can be performed. The mixing vat can, with advantage, be fitted with a slow-speed stirrer to assist mixing and prevent any separation, thus maintaining a supply of consistent compound.

Non-corrosive piping should be utilized—rubber, polyethylene, or similar plastic proving satisfactory for this, with the additional advantage of flexibility. Valves of the diaphragm type with a straight-through bore are recommended, although stainless steel cocks are satisfactory if they can be easily dismantled for cleaning. Suitable pressure can be achieved by gravity, air pressure, or pump. Generally speaking, pumps with metallic valves are not suitable, nor are those which cause vigorous agitation or high velocities through restricted ports.

Some arrangement is necessary in order to maintain a consistent liquid level in the impregnation bath (see Figures 2, 3, and 4). Again, use of copper in the level control apparatus should be avoided.

At the end of every period of operation, it is necessary to flush the entire latex system with water. Provision for doing this should be made when planning the layout. Remember that waste water has to be disposed of. Ample straining should take place before allowing it to flow into public sewers.

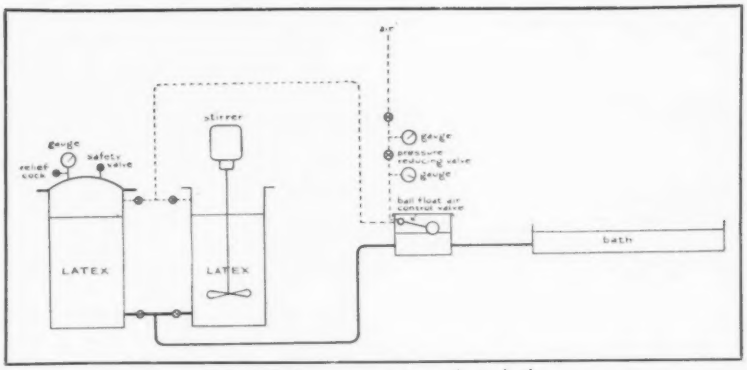


FIG. 3. Twin pressure pot supply to bath.

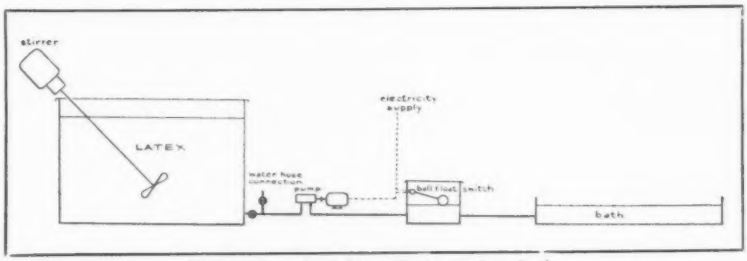


FIG. 4. Pump feed from dilution tank to bath.

1957 broad woven goods output down 6½ per cent from 1956

■ IN 1957 the quantity of broad woven goods produced was 6½ per cent less than the amount reported by the mills in 1956, the Textile Economics Bureau reported in a recent issue of its statistical bulletin, "Textile Organon."

Of the 12,133 million linear yards of cotton, woolen and worsted, man-made fiber, and silk broad woven goods manufactured last year, 9,563 million yards were cotton goods, 292 million woolen and worsted fabrics, 2,245 million man-made fiber fabrics, and 33 million silk and mixture fabrics.

Cotton goods production was said to be 8 per cent below the 1956 figure, with largest declines occurring in the napped fabrics and specialties and all other fabrics classifications. Smaller percentage declines occurred in print cloth yarn fabrics and towels.

The greater part of the 10½ per cent drop in woolen and worsted fabric produced in 1957 as compared with 1956 occurred in the men's and boys' wear fabrics, according to the report.

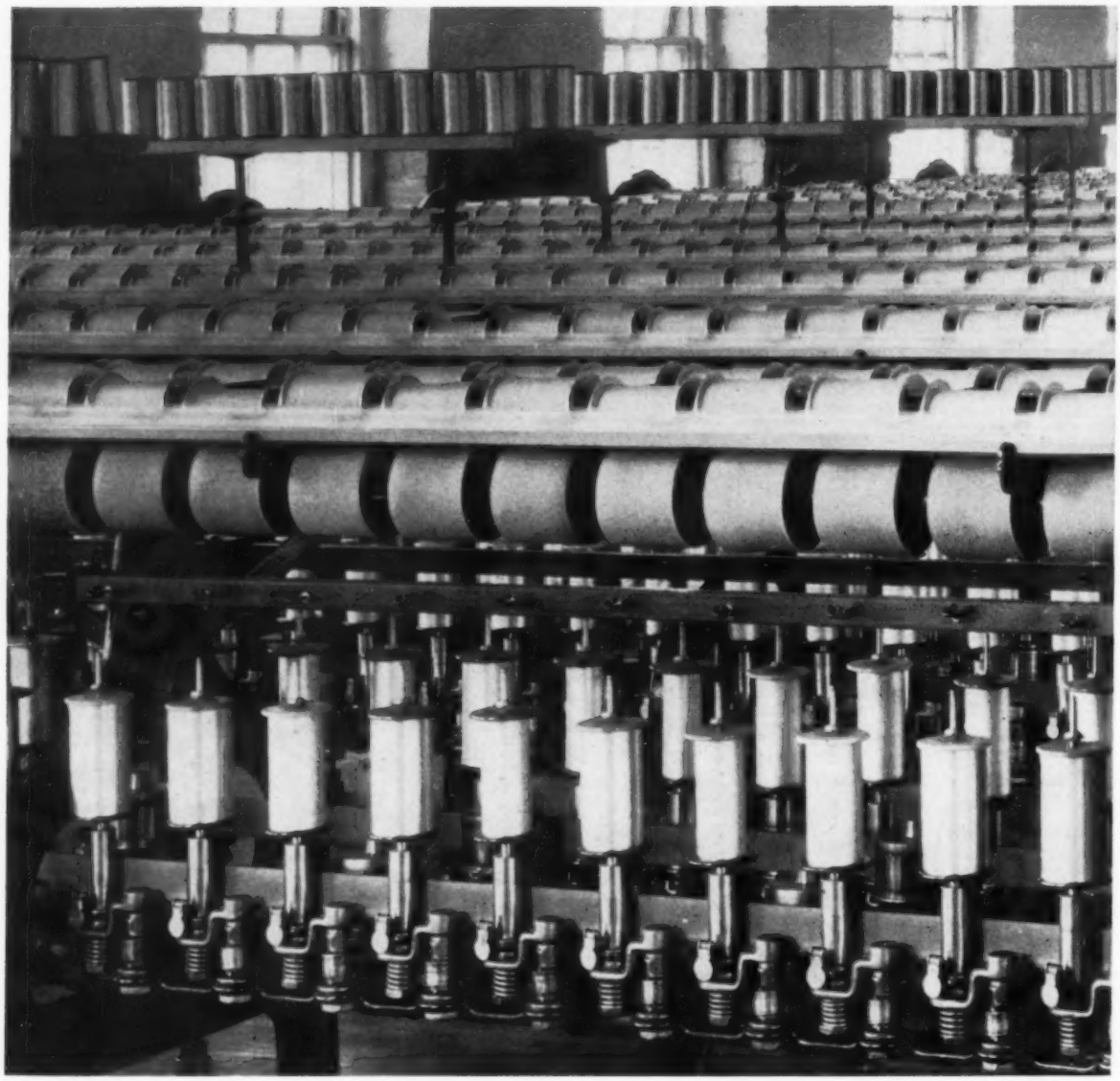
With regard to man-made fiber fabrics, the Bureau observed:

(1) Filament and spun yarn fabric output remained at the 1956 level of 108 million linear yards;

(2) Production of mixtures and blends declined by 10 per cent to 237 million yards;

(3) 100 per cent filament yarn and 100 per cent spun yarn fabrics showed decreases of 12½ per cent and 19½ per cent respectively from 1956 to 1957. There were 692 million yards of filament and 283 million yards of spun fabrics woven last year. Output of velvet and upholstery fabrics has increased in each of the past seven years except in 1956.

(4) Silk fabric production was off 19½ per cent from 1956.



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Today's complex textile machinery is being designed for more precise operation than ever before. Precise *lubrication*—the *right* lubricant at the *right* spot—by the same token becomes increasingly important . . . in fact, *vital* to full realization of your machinery's full output potential.

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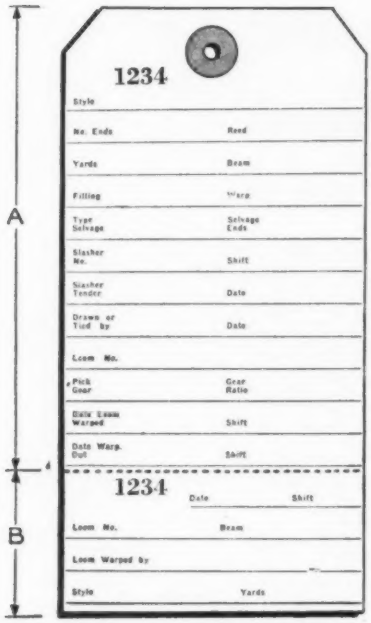


How this two-part warp tag (top labeled A and bottom labeled B) is used is described in the box below.

Warp tag system

improves weave room production control

■ AN IMPROVED method for reporting style changes in the weave rooms at Joanna (S. C.) Cotton Mills Co. was described in a recent issue of the company's employee publication, *The Joanna Way*.

It was explained that during the past few years Joanna has slowly increased the number of different styles of cloth to meet customer demands, and this had made the problem of keeping accurate records as to the style on each individual loom much more difficult. Too, keeping the warp inventory at such a level that the proper yarn ends up in the right style on the correct beam had become increasingly difficult.

A study of the problem resulted in the adoption of the warp tag and system described in the accompanying box. The warp tag, which is the "messenger boy" of the whole system, is prepared in the mill's production control department. Each person who handles the tag adds some additional information and, in the end, the tag is returned to production control.

By referring to the diagram in the box, the path followed by a tag for an N 39 warp can be seen.

THE LIFE STORY OF WARP TAG NO. 1234

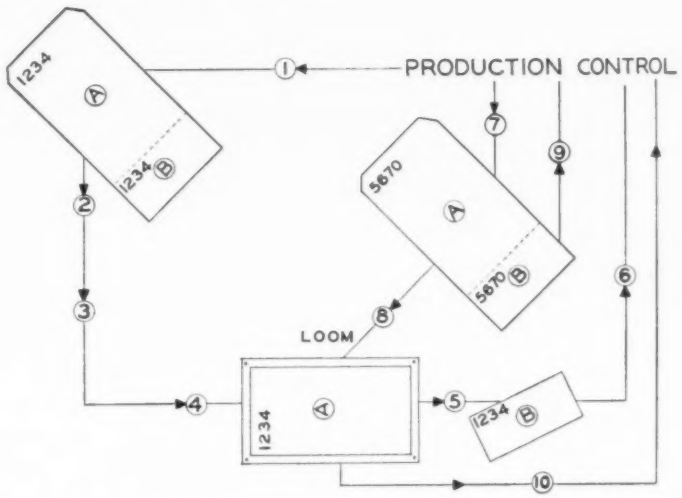
(1) Production Control enters the following information: STYLE **N 39 80 x 80 4.00**; NO. ENDS **3184**; REED **37.50**; BEAM **regular**; FILLING **40**; WARP **30**; TYPE SELVAGE **plain**; SELVAGE ENDS **24**.

The above information is entered on the main part of the tag marked "A" in the diagram. On the stub "B", the style and the beam are also recorded.

(2) The tag is sent to the slasher room. The tag is notification to the slasher room that they will need to run a set of N 39 within the next few days. The tags will be made up at least five to ten days before the warp is needed. The slasher room fills out the following information: SLASHER NO. 1; SHIFT 1; SLASHER TENDER **JKW**; DATE 2/3/58; YARDS **1800**; (on both parts of the tag).

Next the warp is tied to an N 39 pattern and more information is added; (3) TIED BY **JKW**; DATE 2/3/58.

Finally the warp and pattern reach the weave room (4) where this information is entered: LOOM NO. 1584; PICK GEAR **80**; GEAR RATIO 1/1; DATE LOOM WARPED 2/3/58; SHIFT 2. On the stub **(B)**: DATE 2/3/58; SHIFT 2; LOOM NO. 1584; LOOM WARPED BY **JKW**.



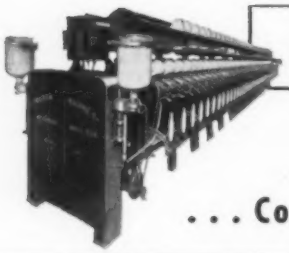
As the loom is warped, part **(A)** is placed in a bracket attached to the loom. Part **(B)** has been torn off (5) and is returned to Production Control. When the stub **(B)** is received in Production Control (6), it is known that under normal conditions an N 39 warp on this type loom with 1,800 yards in it will run off in four and one-half weeks. Immediately, the slasher room is scheduled to run another set of N 39 on this type beam for the week of March 3. This automatically schedules the spooler room to run the above set for the slashers, the spinning room to run the yarn and the card room to make the roving for the spinning frame. Every one concerned will get the "word" as to what, when and where. In this chain of production it only takes one link to snafu the whole deal.

In the event that the style on loom 1584 is changed and the same warp is used for the new style (pick gear change, reed change, etc.), a RED tag is made up by Production Control and sent to weave room along with the loom change. The RED stub **(B)** and the original warp tag **(A)** are returned to Production Control.

It is very important that each loom have the proper identification on it. If for some reason the original tag on the loom is lost, stolen or has strayed, the cloth on the loom is identified and a YELLOW tag is made out for the loom. The weave room supervisors check each loom at least once a shift and procure a YELLOW replacement tag where necessary. The YELLOW tag is made up (7) and sent to the weave room. The weave room operative tears off the stub, places the **(A)** part in the bracket on the loom (8) and sends the **(B)** stub back (9) to Production Control.

When the original warp runs out, the **(A)** portion of the old warp tag is sent (10), along with the stub **(B)** of the new warp tag, to Production Control. The weave room has entered: DATE WARP OUT 3/5/58; SHIFT 1.

Thus ends the life story of one N 39 warp and tag.



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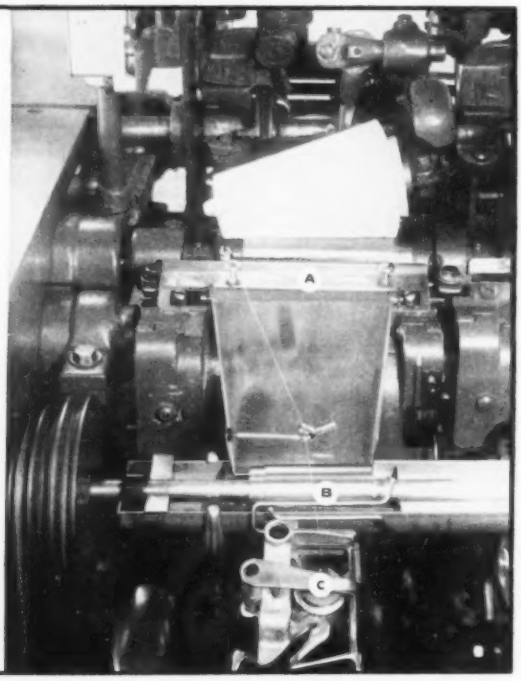
For Backwinding Bulk Yarns

. . . Cones that are Kind to Knitting Machines

Cone of Ban-Lon yarn wound on Foster Model 102-C.



Closeup showing mushroom bottoms (A), moistening attachment (B), and tension attachment (C).

The adaptation of the Foster Model 102 for the winding of bulk yarns is one of many examples of this machine's flexibility. The production of cones that are "kind to knitting machines" involves special winding problems. Here's how Foster solves them with the Model 102:

CONE QUALITY is equal to that obtained on the Model 102 with conventional yarns. Increased taper reduces yarn drag and equalizes tension at all cone diameters.

A YARN CONDITIONER (stainless steel) can be supplied with this machine. It applies any kind of emulsion or oil in any degree desired, without sacrificing winding speed — restores normal moisture, gives a soft hand and lubricates the yarn for better knitting.

MUSHROOM PINS, inserted in the thread bars inside of the extremities of the normal traverse (see illustration), prevent overshot and undershot cones.

TENSIONS are made with fine micro-inch finish, hard carboloy inserts, large chrome-plated tension washers and alsimag tension post. They assure snag-free, long life under highly abrasive conditions.

TRAVERSE GUIDES also have carboloy inserts and fine micro-inch finish.

Find out what the Foster Model 102-C Winder will do for YOUR bulk yarns. Ask us to wind some sample cones.

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259-8

How to extend cooling tower life

■ ADDITION of sulfuric acid to maintain the pH of the water between 7.0 and 7.5 is one of the most effective methods of preventing both internal and surface deterioration of cooling towers, according to a recently published Milton Roy Co. bulletin in which the following methods for metering and pumping acid to cooling water are described.

Continuous pH Control. Refer to the accompanying Fig. 1. A controlled volume pump, accuracy of which is plus or minus 1 per cent, is used to add precise amounts of concentrated sulfuric acid to a mixing chamber. The electronic motor speed control unit (labeled Thymotrol Panel) receives the signal from the pH recorder-controller and, in turn, sends an electrical signal to the pump. Pumping speed is automatically varied to adjust cooling tower water to the required pH. Any deviation from the pH set point is quickly and continuously adjusted by this system with the exact addition of acid.

Chemical Feed in Proportion to Flow Rate. When the pH of the make-up and cooling water is known and relatively constant, the method shown in Fig. 2 may be utilized. A standard controlled volume pump is used to automatically meter acid in proportion to cooling water flow rate, using an auto-pneumatic variable speed drive. Sulfuric acid is automatically fed to cooling water in proportion to make-up water flow rate.

Flow rate is measured through an orifice plate on the cooling water return line. A 3-15 psi air signal is transmitted by a differential pressure transmitter to a characterized cam positioner on the variable speed drive.

Low-Cost Feed Systems. When pH and flow are fairly constant, an inexpensive acid feed system using a constant speed controlled volume pump continuously adds corrective chemical to cooling tower make-up water. The required acid is pumped directly into the cooling water return line.

No additional control need be used, although where an extremely small quantity of acid is required, a timer with adjustable "on-off" cycles can be added to permit cyclic acid addition. Other modifications include manual dial and automatic pneumatic or electrical adjustment of stroke length to vary pumping capacity.

Fig. 1. System provides close pH control in spite of frequently changing water levels or flow rate. Operation is automatic and described as efficient with high accuracy.

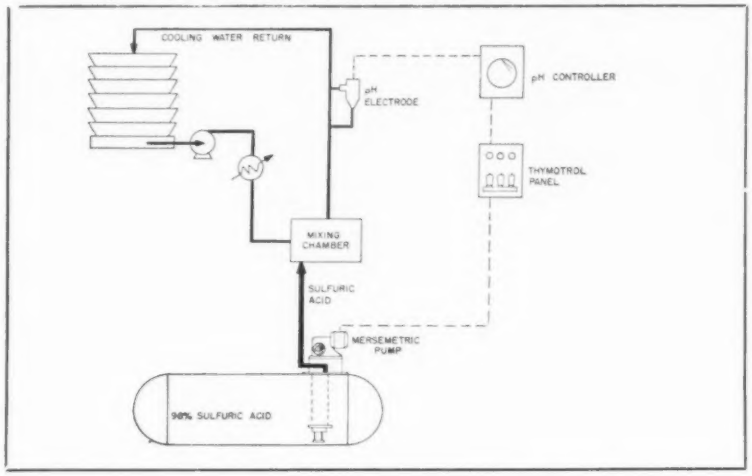
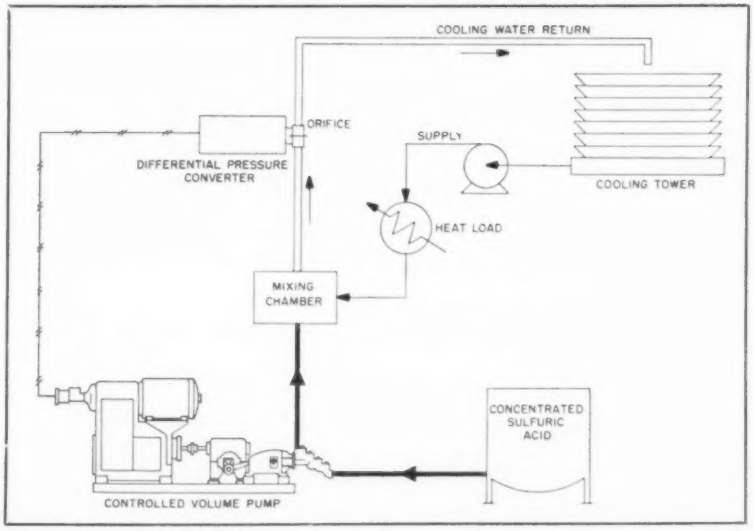


Fig. 2. System for use when pH of make-up and cooling water is constant.

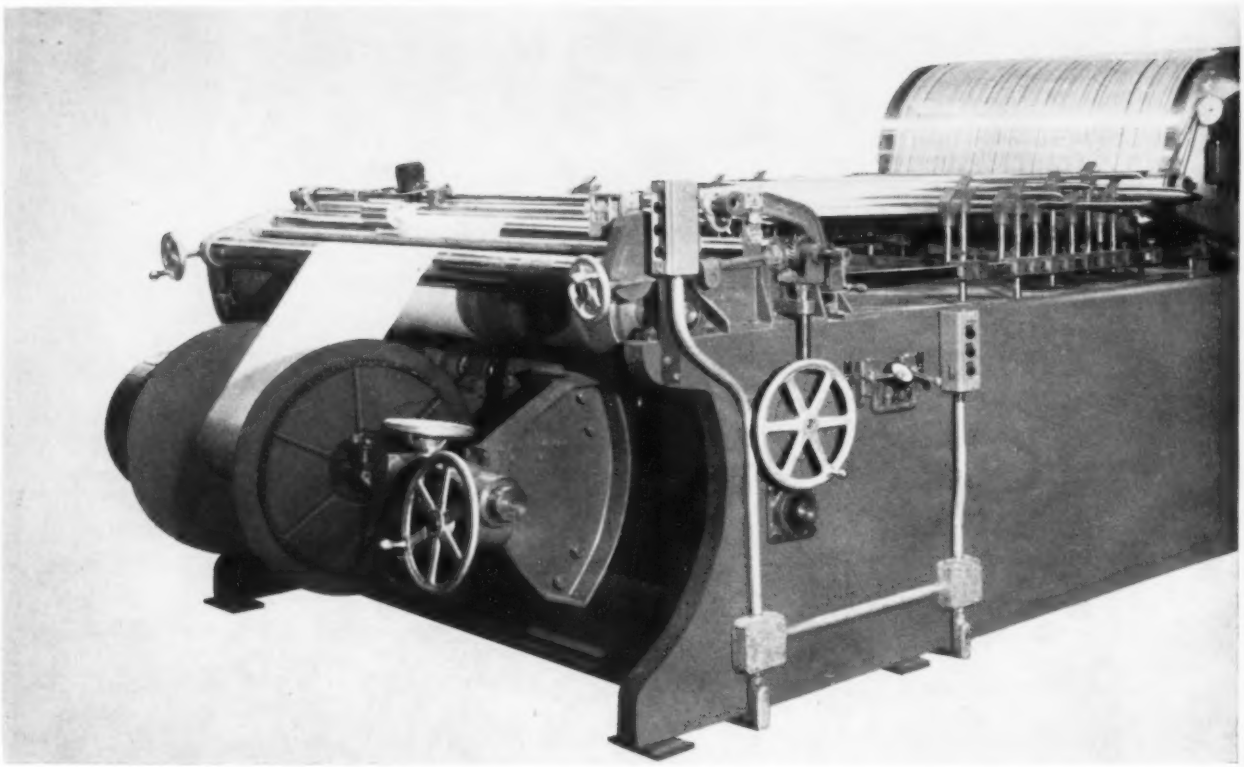


LANCASTER, S. C. 14 West Point 9-cylinder slashers provide slashing capacity for over 9,000 looms in this plant!

FORT MILL, S. C. Four West Point 11-cylinder giants are each slashing at the rate of 1850 to 2500 pounds of warp per hour

KERSHAW, S. C. Three West Point 9-cylinder slashers provide drying speeds of about 125 yards per minute.

SPRING COTTON MILLS
28 West Point Foundry

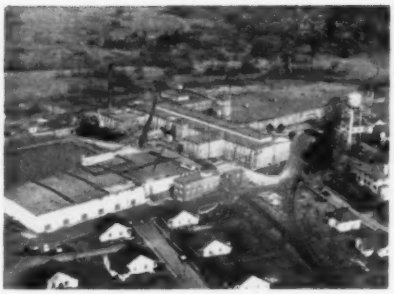


West Point Slashers provide *higher* drying rates, *better* warps

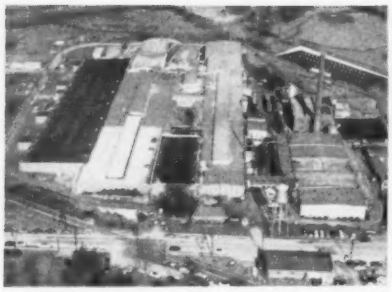
Here are high speed performance and economy you, too, can depend on! The West Point MULTI-CYLINDER Slashers have recorded drying rates of 1590 to 1635 pounds per hour on nine cylinders, and the 11-cylinder slashers have turned in record performances of 1850 to 2500 pounds per hour. Speeds of 110, 125, and 150 yards per minute are achieved regularly without sacrificing the high quality necessary in today's exacting textile operations.

West Point Slashers can do the job for you regardless of fibre requirements. The Teflon coating on entering cylinders make them completely applicable

SPRINGSTEEN, CHESTER, S. C. One West Point 9-cylinder replaced two 3-cylinder slashers for higher production in less space.



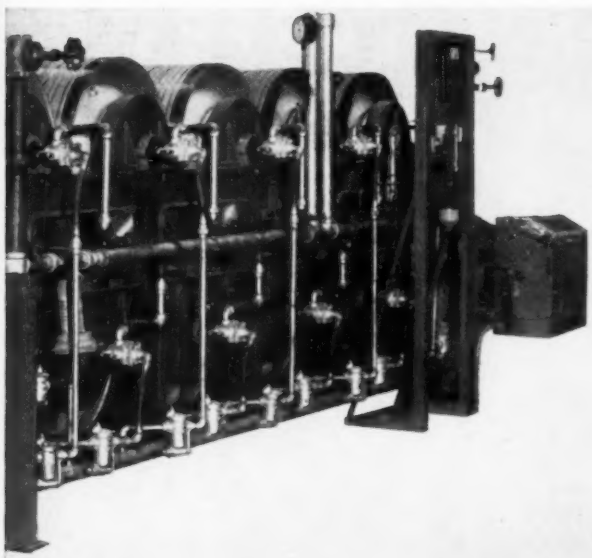
GAYLE, CHESTER, S. C. Three West Point 9-cylinder slashers more than answer highest production and quality requirements.



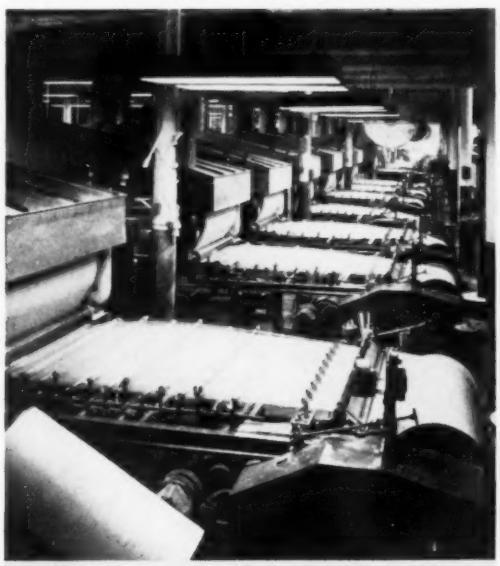
EUREKA, CHESTER, S. C. Three West Point 9-cylinder slashers here bring the total to 28 MULTI-CYLINDER slashers.

now operates Slashers

. . . with installation of three new West Point Multi-Cylinder Slashers in Eureka Plant, Chester, S. C.



You have a choice with West Point Foundry, because West Point makes *both* MULTI-CYLINDER and AIR-DRI Slashers.



Spring Cotton Mills Lancaster Plant: *14* West Point MULTI-CYLINDER slashers handle over a million yards of yarn each week for over 9,000 looms in the world's largest cotton mill.

to cotton. Multiple cylinders permit graduated temperature controls when required for synthetic warps. Multi-motor drives, superior tension control throughout, and steam economy are just a few of the many reasons why West Point Slashers are money-makers for you. Contact West Point today.

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WEST POINT, GEORGIA

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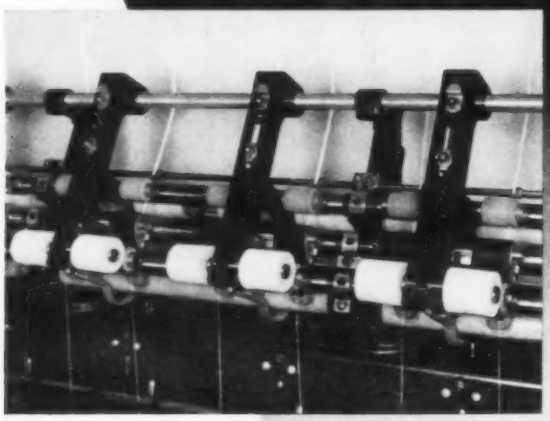
SACO-LOWELL SPONGE RUBBER CLEARERS

For Most Roving & Spinning



Offer 5 Big Advantages That Save Time, Save Labor, Save Your Money!!

1. Waste is completely removed in seconds with a single motion of the hand.
2. They outlive cloth covered clearers many times.
3. Eliminate necessity of a full-time picking crew.
4. Does away with hand tool and power driven mechanical clearer picking methods.
5. Are applied directly over steel shafts — no wooden bosses are necessary.

There can be no question, these new Saco Lowell Sponge Rubber Clearers are the low cost answer to the excessive clearer waste caused by the low grade cotton crop which is creating abnormally high fibre breakage. They are also particularly desirable for mills spinning coarse carded stocks or synthetics and blends which build-up clearer waste quickly.

In addition to doing a better job, they last longer and cost substantially less than old fashioned, cloth covered clearers.

Obtain the full story on this "LATEST DEVELOPMENT OF SACO-LOWELL RESEARCH" from the nearest Saco Lowell Sales Office.

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Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA

HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Disagrees with chlorine retention article

THE EDITORS:

As Chairman of the A.A.T.C.C. Committee on Damage Caused by Chlorine Retention, it has been brought to my attention and I have been directed to write to you regarding the article "Chlorine Retention of Resin Finishes," by P. J. Fynn, which appeared in the June, 1957, issue of TEXTILE INDUSTRIES.

The big problem facing the Committee is that of achieving reproducibility between laboratories using either the Tentative Test Method 69-52 as it appears in the A.A.T.C.C. Technical Manual, or the Revised Test Procedure currently being used by the Committee in its work. The work of the Committee would indicate that one of the big stumbling blocks in achieving this reproducibility is the improper use of the test method by not following the directions given. Consistent with this, we feel it imperative on our part to bring to your attention the incorrect inference to be taken from the two photographs appearing with this article.

The photograph in the upper left hand corner on page 134 of the article has the caption, "The fabric of a dress damaged by chlorine retention is subjected to the grab test to determine breaking strength." What is illustrated by the photograph is certainly not a grab test being performed, nor is it any part of the chlorine retention procedure to be breaking such a size piece of fabric.

This perhaps is obvious to anyone familiar with the test method. However, the photograph in the upper right hand corner with the caption, "The scorch tester is used to determine chlorine retentive properties of resin finishes on cellulosic fabrics," is definitely more misleading, since it shows, presumably, a test piece being scorched as part of the chlorine retention test procedure.

This illustration is definitely in error. When performing the scorch test using the specified size sample in the test method, the sample is scorched across the narrow dimension of the specimen, i.e., the long direction of the specimen is laid perpendicular to the long direction of the scorch test heating plate so that the specimen is scorched across the narrow direction. The specimen is also so scorched that the scorched area will be in the center of the fabric, allowing it to be between the jaws of the tensile strength machine when the break is made.

In view of the controversial nature of chlorine retention testing and its implications, we would appreciate your bringing this matter to the attention of your readers.

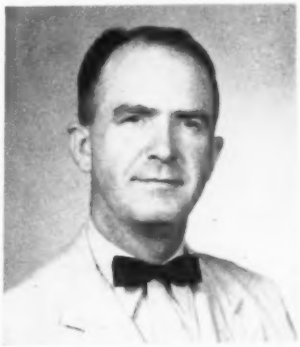
RICHARD F. AURICH

THE EDITORS:

I regret that the illustrations supplied for my article were not photographs of actual tests in progress. The photographer was sent in with the technician to "dummy-up" some specimens for the photographs. I admit that this was negligence on my part in not checking the set-up to see that everything was represented according to the letter of the test procedure.

Neither the photographs nor the article pretended to be instructions on how to run a chlorine re-

He Won the Latest Kink Contest!



Sam J. Phillips, Jr., Cary, N. C.

For his method of removing and replacing the flats drive sprockets and shaft on the front of cotton cards, the judges of TI's Kink Contest which ended April 15, awarded Mr. Phillips the $100 prize. His home address is Route 1, Box 40, Cary, N. C.

For details on the contest which ends on August 15, see p. 109.

VICTOR FINISHING STARCHES

FOR PURE FINISH

Victor P-40-U

SMOOTHER HAND
BRIGHTER SHADES AND WHITES

FOR BACKFILL

Victor 10-55

MORE MELLOW HAND
ALWAYS UNIFORM • CARRIES MORE TALC

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TEXTILE SALES DIVISION
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THE KEEVER STARCH COMPANY
GENERAL OFFICES-COLUMBUS, OHIO

Processors of corn, wheat and blended starches
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tention test. Those who handle this test as a routine matter know how it is to be done and will recognize the photographs as being incorrect, and those who have no dealings with the scorch tester will not be particularly interested one way or the other.

However, it is unfortunate that the subtitles under the pictures were couched in terms used in the official description of the test.

P. J. FYNN
Director, Research Laboratory
J. C. Penney Co., Inc.

More speed with 8" quills?

THE EDITORS:

We are presently running our 44" X-2 looms at 178 ppm with 8¾" quills and would like to get more production by increasing the speed. We have heard that by going to 8" quills and smaller shuttles we could probably get another 10 to 15 ppm.

Could you tell us the experience of other mills which have done this, from the standpoint of:

Cost of changeover
Repair costs
Quality
Loom stops and efficiency
Looms per fixer
Looms per weaver?

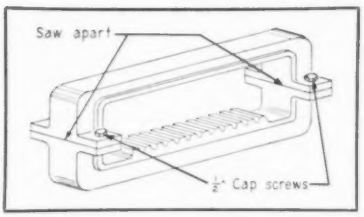
CONTRIBUTOR No. 1025

Speeds slubber repairs

THE EDITORS:

On some models of roving frames, the lifter racks which move the carriages vertically are designed so the fixers must pull the lifting shaft in and out to install the rack. This takes a great amount of time normally, so I devised a way of cutting this downtime to a minimum.

Since the racks mesh with the lifting gear, which is fitted onto the lifting shaft, there are times when either the rack or the gear will have teeth to give way. It is very simple to fit the lifting gear to the shaft, because the plant can purchase what we call a split gear.



This gear is made so the fixer can tap it with a hammer and make it fall in two, ready to straddle the shaft. It can be installed in a matter of minutes.

Not so with the solid, one-piece rack which is in use on the older slubbers and speeders. The racks do not come apart as do the newer split gears.

In a recent breakdown on a roving frame in our plant, I (with the help of our mechanics) rigged the rack in our power saw and split it open so it could be straddled in place. By so doing I installed the new rack in a matter of minutes, and had the machine back in operation promptly.

To rig the power saw for making the cut, secure the rack with "C" clamps along the frame of the power saw. Drill and tap a hole in each end of the rack (see illustration) to receive a ½" cap screw.

These screws assist in bringing the pieces of the rack back to a perfect fit after the saw cut is made, for once the rack is split, it is ready to be inserted in the frame.

CONTRIBUTOR No. 1000

A gripping situation

THE EDITORS:

When dismantling machinery, removing shafting or ends from looms or quilling machines, etc., the hands of the mechanic and the tools he uses get oily enough to make positive gripping a problem. Frequently the hammer must be used under these conditions, and then the tools becomes a threat to

Win $100 REACH FOR THAT IDEA NOW! **Win $100**

Kink Contest Closes August 15, 1958. Send Your Entry Now!

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance, and the $100 award will be made to the winner as soon as all entries are judged.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, August 15, 1958.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.

News about

B.F.Goodrich Chemical *raw materials*

To help you...

produce better fabrics

...for wider appeal and lower costs, it will pay you to get complete information about all the products and services available from B.F.Goodrich Chemical Company. More information about the products and processes illustrated on this page—and many more—can be obtained by writing Dept. SA-3, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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B.F.Goodrich

GEON polyvinyl materials • HYCAR American rubber and latex
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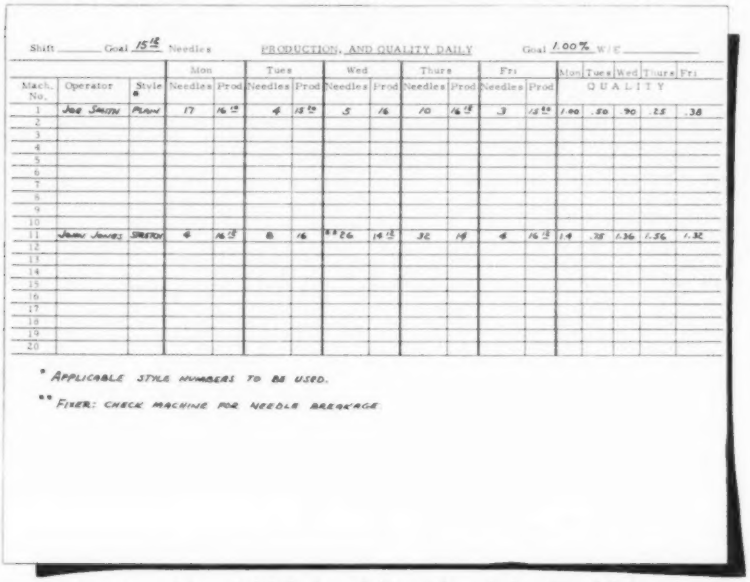
the safety of others. The handle becomes so slippery that the person wielding the tool cannot hold onto it.

A simple way to make such handles slip-proof is to bore a series of holes about 3/16″ deep and on an angle toward the hammer head. This will provide a good grip for the fingers. The holes should be bored over an area extending from 5″ to 6″ from the outer end of the handle.

CONTRIBUTOR No. 1009



Shift _____ Goal 15¢ Needles PRODUCTION AND QUALITY DAILY Goal 1.00% W/C _____

Mach. No.	Operator	Style *	Mon Needles	Mon Prod.	Tues Needles	Tues Prod.	Wed Needles	Wed Prod.	Thurs Needles	Thurs Prod.	Fri Needles	Fri Prod.	Mon	Tues	Wed	Thurs	Fri
													QUALITY				
1	Joe Smith	Plain	17	16.15	4	15.50	5	16	10	16.15	3	15.50	1.00	.50	.90	.25	.38
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11	John Jones	Stretch	6	16.15	8	16	22**	14.15	32	14	6	16.15	1.4	.28	1.36	1.56	1.32
12																	
13																	
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* APPLICABLE STYLE NUMBERS TO BE USED.

** FIXER: CHECK MACHINE FOR NEEDLE BREAKAGE

This chart, which is posted daily, keeps knitters informed of quality of their work.

Quality control form for knitters

THE EDITORS:

We keep an up-to-date record of the number of stockings produced, the number of needles used, and the number of rejects (stockings returned to the knitting machine operators) expressed as percentage of production on the accompanying chart. Since most employees will try to stay competitive with other employees on the same job and on similar styles, we use the chart as a means of letting each employee know how he stands in the group.

The chart requires very little time to maintain. Of course this depends on the number of knitting machines involved.

For example, on 50 knitting machines the needle consumption and production are taken from production cards and are entered on the chart for the previous day's work. This requires approximately 15 minutes of posting time. After the needles and production are recorded, the chart is posted in a conspicuous place so that all knitting machine operators may look at it. In our case it is posted on the bulletin board in the commissary area.

Sometime during the shift, after everyone has had an opportunity to look at it, the chart is removed from the board and the quality is figured by dividing the number of dozens inspected into the number of stockings returned to the operator. A dozen, in this case, means 24 stockings or 12 pairs.

For example, if an operator had 33 dozens inspected and had eight bad stockings in the lot, his quality would be:

$$\frac{8}{33 \times 24} = 1.01\%$$

We would round this off to 1.00.

CONTRIBUTOR No. 1024

HOW OTHER MEN MANAGE

Use cheaper tie-bands

THE EDITORS:

Here is a big money saver! We use upward of 45 tons of woolen yarns weekly. The tie bands for the skeins of coarse counts went into waste at one time, and one only needs to imagine how much yarn weight actually was represented in the tie bands. Sometimes it ran to 1000 lb weekly, and about half of this came from the "loose" or "floating" tie-band, not the one which is made by the two ends of the skein.

To save from making the loose tie-band of yarn from the skein, we send cheap cotton into the reeling department, particularly those faulty cheeses which will not run in the creel, etc.—also, yarns which are redundant or unsuitable for weaving. Annual net saving in woolen yarn is now about 15,000 lb, which is money!

CONTRIBUTOR No. 1012

Wash-and-wear fabric care

THE EDITORS:

It has been noted that in many deliveries of wash-and-wear fabrics which are delivered rolled on paper tubes, the cutters have run into no little difficulty with dirty selvages caused by the ends of the rolls rubbing against papers, cartons, or cases while in transit from the finisher to the cutter. Since most of the cotton wash-and-wear fabrics are put up on rolls to eliminate wrinkles or cured-in creases, the proper way of putting up these rolls on tubes would be to roll the fabric on tubes which are 3″ longer than the cloth width so that the tube can protrude from the end of the roll 1½″ on each end. This would protect the selvages from

When you order travelers made to exact specifications

In the Victor control center, test travelers are magnified to many times normal size on the Comparator screen, to make sure the size and shape conforms exactly to specifications. At left, microscopic inspection determines if surface quality meets required standards.

How near is "near enough"?

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This extra measure of quality control maintains the uniformity in traveler dimensions, weight, and performance that you must have to avoid production lags. Today's high speeds, and other punishing demands placed on travelers by modern equipment, have greatly reduced the permissible "margin for error."

At Victor's master control center, the experience and skill of Victor operatives is supplemented by a series of tests, at each stage of traveler production, using the most advanced techniques and equipment. The metal, shape, weight, temper, and finish undergo thorough physical, chemical, and optical tests and inspection. Every possible control is applied to make sure that every package of Victor Travelers you receive will precisely match original specifications.

For helpful advice in traveler selection, talk to a Victor Service Engineer. Call the nearest Victor office for prompt service.

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rubbing on the cartons or cases while in transit.

If this method were followed, it would go a long way toward solving many of the problems due to dirty selvages that exist at the present time.

It must be kept in mind that on most wash-and-wear fabrics the selvages are utilized as part of the garment, especially on the fronts of dress shirts, sport shirts, and pajamas, because most of the garments are manufactured folded in seamless fronts, being stitched down by the button attachment or buttonholes.

CONTRIBUTOR No. 1022

Advice on slashing dyed yarns

THE EDITORS:

We have a new warp dyeing machine which is going to be used in dyeing blue denim. We have no warping machine with which to make soft warps, so on the test runs we made the dye did not penetrate the beam perfectly because the warp was wound too hard. We used perforated beams.

My question is: Which factory is delivering the best soft warping machines? Maybe you can give me the names of several suppliers.

One agent here is absolutely sure that there must be drying equipment between the dyeing and the slashing. Personally I cannot see the reason, if I am dyeing a warp and afterward slashing the warp, why the warp needs to be dried between the processes. We can keep the concentration of the size constant, even if we are feeding the size box with a warp containing a lot of water. Certain that we cannot have the warp wait many days wet, I will schedule the warps to be slashed immediately after dyeing.

CONTRIBUTOR No. 9088
(Ecuador)

(This request was forwarded to the author of the series, "Warp Sizing." His reply follows.—The Editors)

CONTRIBUTOR No. 9088

With regard to your problems on the warp dyeing machine, we note that you say you are dyeing denim a blue color. If you are dyeing this with an indigo, we can understand that you are having difficulties, as this is a difficult operation, and is usually carried out in a continuous warp dyeing machine in this country. We almost never see this dyed in beams.

For beam dyeing operations, the following people manufacture warping machines which are satisfactory:

Barber-Colman Company, Rockford, Illinois.

Cocker Machine & Foundry Company, Gastonia, N. C.

Robert Reiner, Inc., Weehawken, N. J.

All of these are satisfactory for winding a dyeing beam.

We do not know at present what way you are handling your present beams. If you are warping at high speeds, we suggest that you cut the speed down to 300 to 350 yards per minute and wind with just as small amount of tension as possible. This would help give a softer beam.

Another thing which would help would be to make a small package, not over 200 pounds, and maybe as low as 150 pounds if necessary.

You need not completely dry the yarn between dyeing and slashing. It should be blown as dry as possible with air in the dyeing machines. For best results many of our mills use a couple of drying cans, about 20 or 22 inches in diameter, between the creel and the size box. This will be adequate for removing a large proportion of the moisture and will materially improve the sizing operation. Occasionally four cans are used.

If the warp stands around very wet before slashing, it should be moved occasionally so that all of the water in it is not on one side, which would throw it out of balance.

The biggest difficulty in sizing a wet warp is that a yarn full of water will not pick up the size readily. In order to have the size penetrate into the yarn far enough

so as to hold a film on the surface of the yarn, it must first displace the water if the yarn is wet. Therefore a partially dry yarn can be much more easily sized.

Another thing you will note in slashing wet yarns, is that the squeeze rolls squeeze some of the moisture out of the yarns as well as the excess size, so that the concentration of the size in the size box is continually decreasing.

If you are able to keep the size concentration constant, this will be all right, but you should note that the concentration of the size should be higher in slashing a wet warp than a dry one, as a wet warp will not pick up as much size. The concentration should be checked every twenty or thirty minutes, and oftener if necessary. If you find the size is being diluted too much, some of the size in the box should be dropped and replaced with fresh size.

We would also suggest that you use an effective wetting agent and dye assistant to give you good penetration and level dyeing.

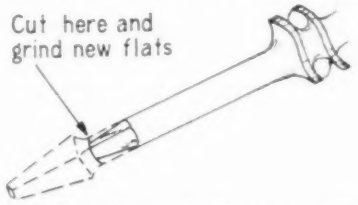
PAUL SEYDEL, D. Sc.
Seydel-Woolley & Co.

You can adapt wood bits for electric drill use

THE EDITORS:

Wonder if any of TI's readers ever wished he could use a wood bit in an electric drill?

Cut off the square tang and grind new flats on the shank. Then



the bit can be used either in a drill or a hand brace. Flat places ground on the larger size metal drill bits (3/8" and up) will make them fit in a hand brace without slipping.

CONTRIBUTOR No. 1021

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When a CARTER representative calls, he has more than a top-quality, precision-engineered product to offer.

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His call—and his product—will save you time and money.

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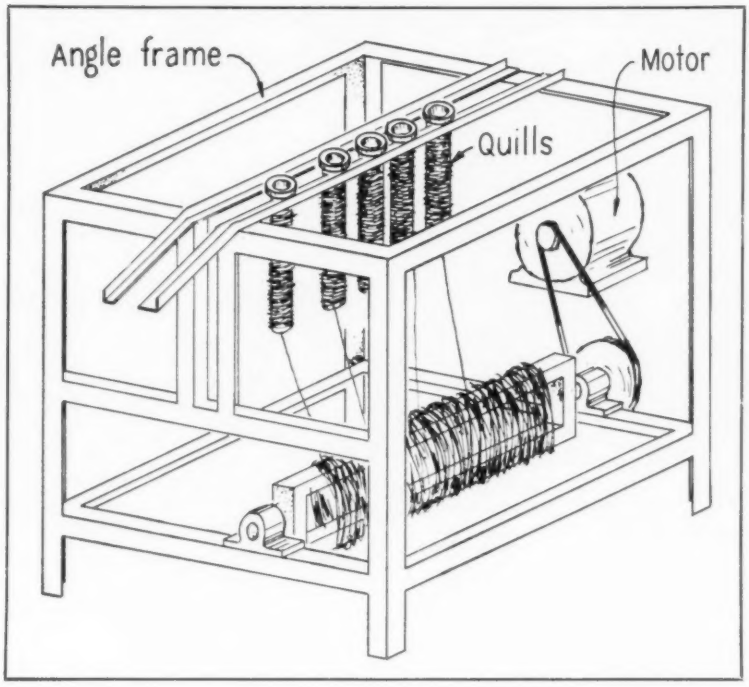
Backwinder for soiled filling

THE EDITORS:

This is a soiled filling unwinder which I built for our weave room. While no one wants to waste filling, a bad doff or a lot of new help can sometimes result in quills to be wound off. I built this machine and put it in a handy spot in the weave room so that soiled and damaged quills could be put in it and let run off unattended. Some of our filling is very heavy and dangerous to wind off in conventional manner with a swift moving mounted spindle.

When the quills are all emptied, they are shoved off into a box which is taken to the quilling department where the quills are sorted.

I found this quite a help, as it keeps soiled filling cleaned up at all times. Of course foremen have to watch that it is not being used excessively.



It is made of short pieces of angle iron (see the illustration) and has a 1-hp motor mounted on it so it can be moved and plugged in where necessary. When the waste on roll gets too big for the drive motor, it is cut off.

The roll is made of pieces of 1" flat stock welded to two end pieces. The waste is easily cut off.

CONTRIBUTOR No. 1001

More about laying wooden floors

THE EDITORS:

As CONTRIBUTOR No. 9050 stated, any type of wooden flooring set with the end grain up will trap and hold lint stubbornly. In fact, any type of wooden flooring laid in the conventional manner will trap lint unless the flooring is properly sanded, prepared, treated, and then maintained that way.

Wooden floors must be maintained so as to prevent grain raising. If the wood is treated with a good filler when the floors are first laid, then the floors, with proper maintenance, generally keep a smooth surface.

Edge grain or flat grain maple flooring can be laid over a concrete subfloor, provided the concrete is finished to a smooth and level surface—no raises nor projections.

The concrete floor must have expansion joints at intervals filled with a mastic. When the concrete floor is thoroughly set and is found to be reasonably level, a mastic can be applied (cold trowelled) and the maple flooring set into it. The flooring should be second and better quality for industrial buildings, 33/32" thick x 2½" face, tongue and groove, and in short lengths.

Expansion joints should be provided at walls, columns, and doors. In large expanses, the area should be subdivided into smaller sections and expansion joints provided. After the wood is sanded and prepared, two coats of a good quality sealer should be applied, allowing thorough drying between coats.

CONTRIBUTOR No. 1016

Use knitting needle boxes

EDITOR TEXTILE INDUSTRIES:

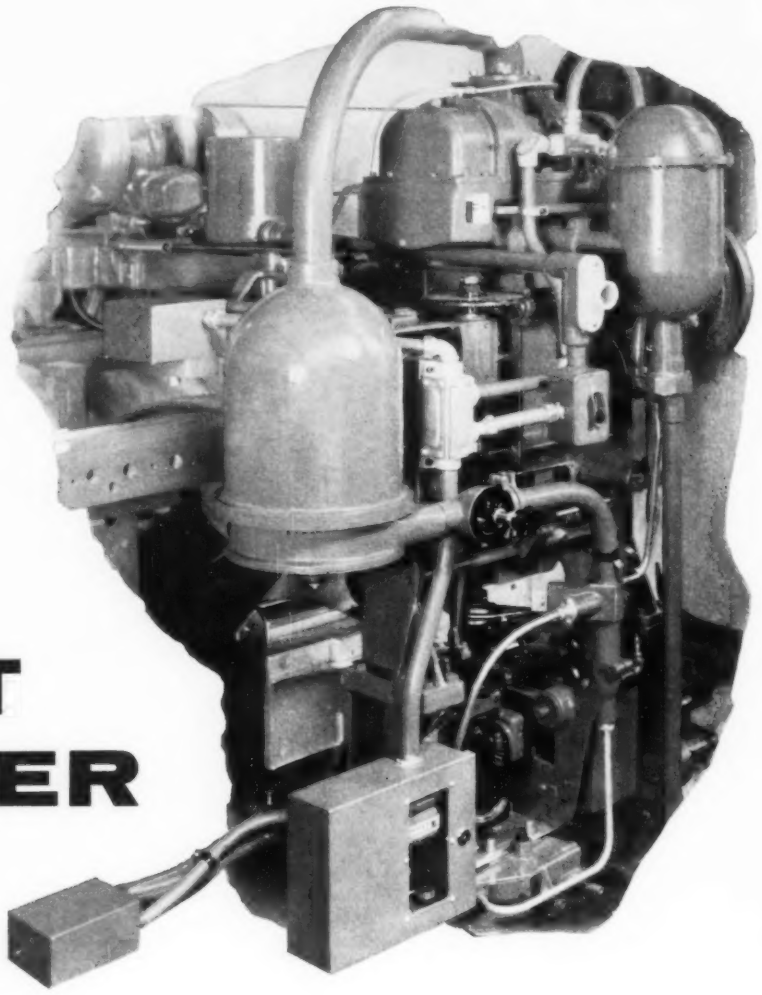
The boxes used in the shipment of knitting needles are handy containers around the knitting room. They can be used to advantage for storing a number of small spare parts after the needles are used.

However, they are not strong enough to stand much abuse, misuse, or prolonged handling without some type of reinforcement. We use the boxes as mentioned only after we tape the corners of the boxes with a plastic tape. Tape each outside corner and fold the tape over the top of the box and pass it about ½" down the inside corner.

CONTRIBUTOR No. 9014

TO PROVIDE A RELIABLE BOBBIN COUNT WHERE INCENTIVE PAY IS USED . . .

BARBER COLMAN



Automatic

KNOT COUNTER

FOR TYPE C AND CC

AUTOMATIC SPOOLERS

This new unit, which can be attached to any Barber-Colman Type C or CC Automatic Spooler, provides a reliable arrangement that will automatically count the number of bobbins put up by each operator in any selected period.

Accuracy is close to 100%. The sensing device is a star wheel, actuated by each pull rod when in its running position, which then closes a switch to operate the counter.

All efforts have been made through mechanical devices, electrical safeties, and cut-out cams to prevent registering of extra and unauthorized counts.

The Knot Counter is available for any number of operators and will give a separate count for each. If the number of operators is changed, the Counter can be changed to correspond. Also, if a change is desired in the number of units per operator, this can be accomplished by changing the cam position. Complete installation and operating instructions are furnished, including templates to aid installation by any competent mill mechanic. *For details, inquire of your Barber-Colman representative.*

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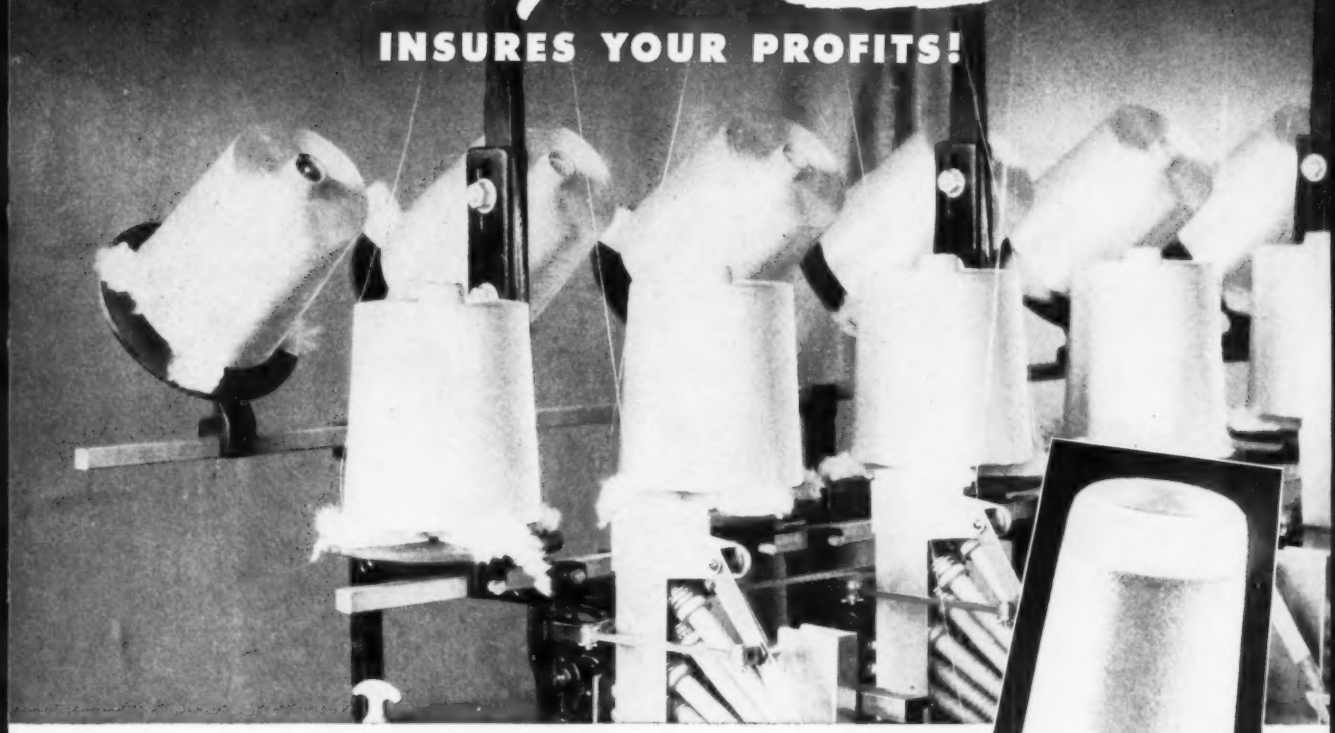

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3° 30′ CONES

Only the best carrier can give you the perfect package necessary to insure your profits—and only SONOCO, with nearly 60 years' experience, can give you the carrier best suited to your needs.

The 3°30′ cone was originated by SONOCO with the introduction of rayon. Problems in winding and creeling synthetic yarns were solved then, as they are now, with this universally-accepted SONOCO cone.

Only from SONOCO do you have a choice of 3°30′ cone surfaces. These research-developed surfaces, along with precision manufacturing, assure you of a foundation for a perfect package . . . best for profit protection.

SONOCO

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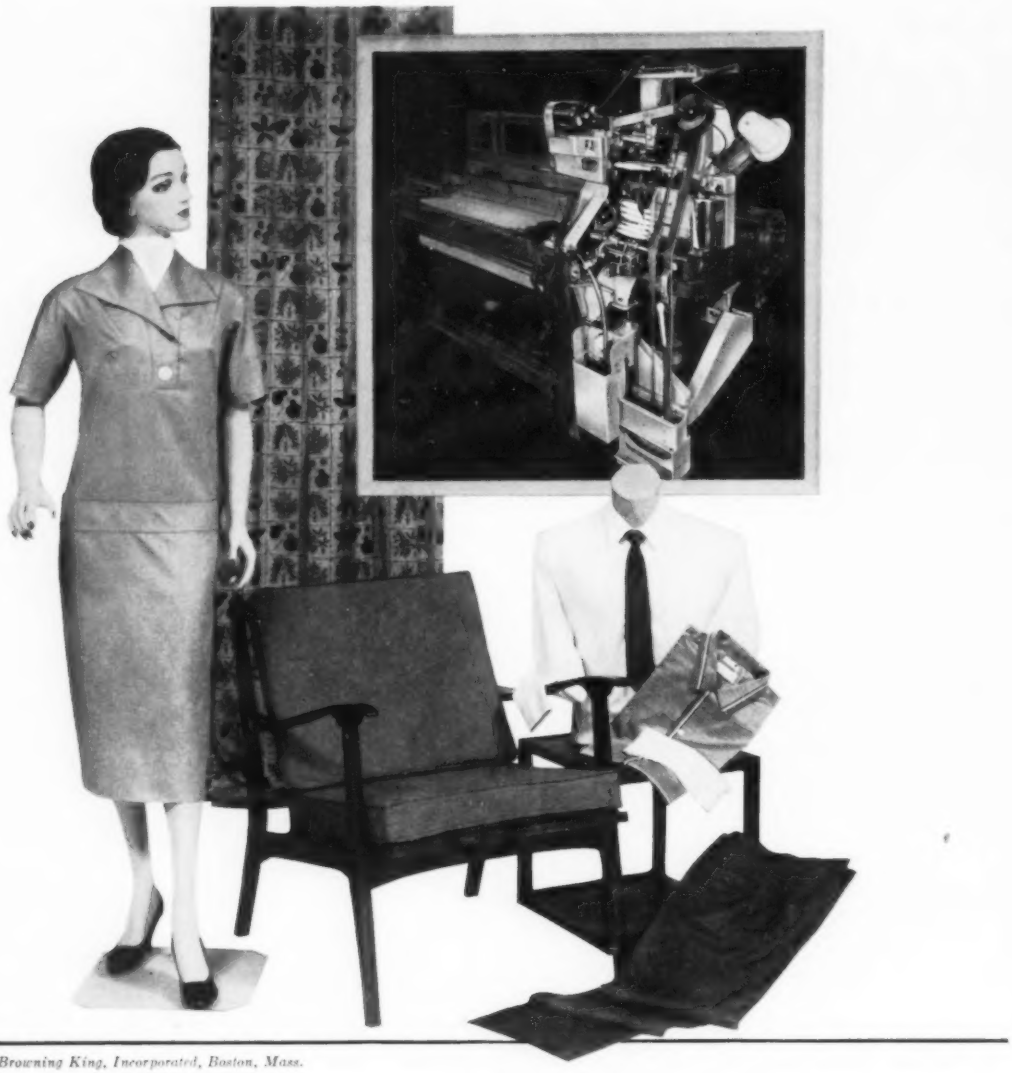

Garments courtesy of Browning King, Incorporated, Boston, Mass.

You'll weave these better and at lower cost with UNIFIL®

Many mills are proving it every day.* Cotton, spun and filament synthetics, textured and novelty yarns—all weave better with Unifil.

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Discriminating people who want both style and quality in a sweater, daily choose knitted fabrics from this versatile machine • The LH-6 will knit plain jersey . . . links and links . . . cross links and links . . . half cardigan . . . 2 or 3 color Jacquard designs . . . self pattern designs – with 2 x 2 or 1 x 1 cuff • For complete technical data, write for bulletin LH-6.

All day long . . . sweaters belong

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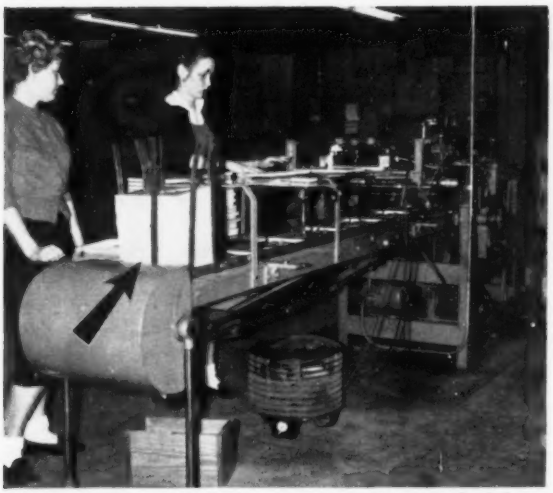
Manufacturers of HEMPHILL BANNER Knitting Machines



Two operators are needed for the wrapping machine—one feeds boxes to the machine and one removes the finished packages. Note special box feeder (arrow) which the mill installed to simplify box feeding.

Package increases hosiery sales

How Chester H. Roth Co. boosted supermarket sales 5%

Staff prepared Exclusive

THE LADIES' hosiery finishing division of Chester H. Roth Co., Inc., Burlington, N. C., has had overwrapping packaging machinery in operation since September, 1957, and a 5% increase in product distribution has been facilitated by the improved package. Older customers also prefer the overwrapped goods. Only the customer handles the hosiery after the finishing operations. Designed for supermarket distribution, the packages afford full protection to the hosiery upon marketing.

The automatic machine permits the use of overwrapping cellophane to make packaged hosiery more attractive to the customer and ultimate consumer. The overwrapping helps prevent damage to the hosiery while in stock and presents a neat appearance to the prospective buyer.

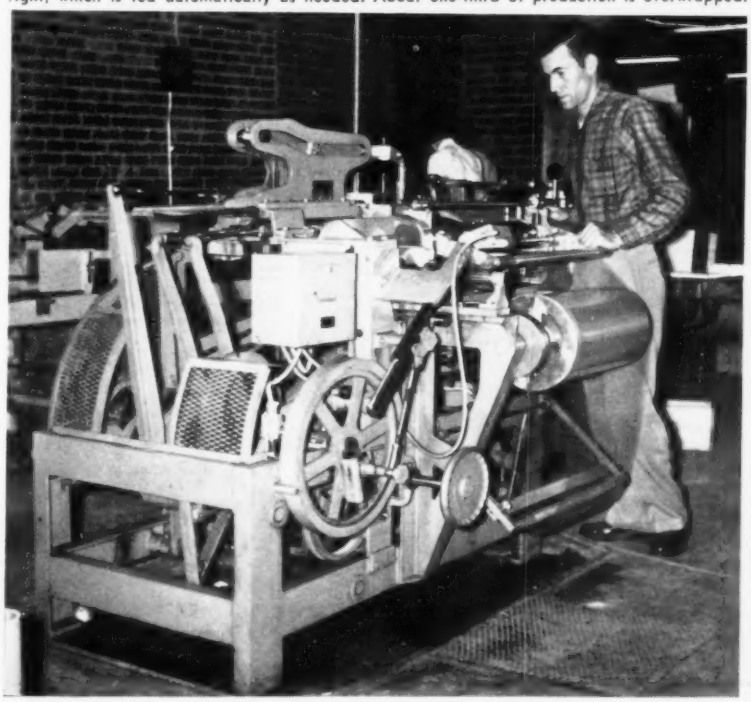
In operation, the packaging machine automatically places a covering of cellophane over a box or folder containing ladies' nylon hosiery. Production in this instance is about 32-35 packages of hosiery a minute, or about 2200 to 2400 dozen pairs in two-pair boxes every eight hours (14,500 boxes). One operator usually wraps about 600 boxes a day in manual operations. In this mill, nylon hosiery is wrapped in units of one to three pairs to each box, although the machine can handle units up to a dozen pairs per box.

ACCORDING to Jim Curry, superintendent of the finishing plant, overwrapping with cellophane is an extra operation performed by the automatic machine and is an extra-cost item. The automatic machine, cellophane, and extra operators required to make the better package are well worth the investment, as evidenced by the increase in product distribution since initiating the improvement.

This finishing plant handles production from about 11 knitting plants, and about one-third of this production goes through the overwrapping machine. Only prefabri-

(Continued on page 131)

Maintenance is confined to routine care and oiling once a day. Note roll of cellophane on right, which is fed automatically as needed. About one-third of production is overwrapped.



Flat-butt closure of gusset has 70 stitches per inch, and it is comfortable to wearer's foot. Picture was made through glass, with weight on foot to show the pressure points.

Getaz loopless toe on men's socks is similar to construction on ladies' seamless hosiery.

Here's that

Getaz toe for ladies' seamless hosiery eliminates

Staff prepared

Exclusive

THE GETAZ (pronounced gee-taz) toe, or loopless toe ladies' seamless nylon stockings currently in production at Adams-Millis Corp., High Point, N. C., feature several advantages as compared to conventional construction of similar hosiery. No looping is required, eliminating the cost of this operation. The toe of the stocking is closed by seaming a gusset located on the bottom of the foot in the center and extending from a point near the end of the toe for approximately three inches toward the heel.

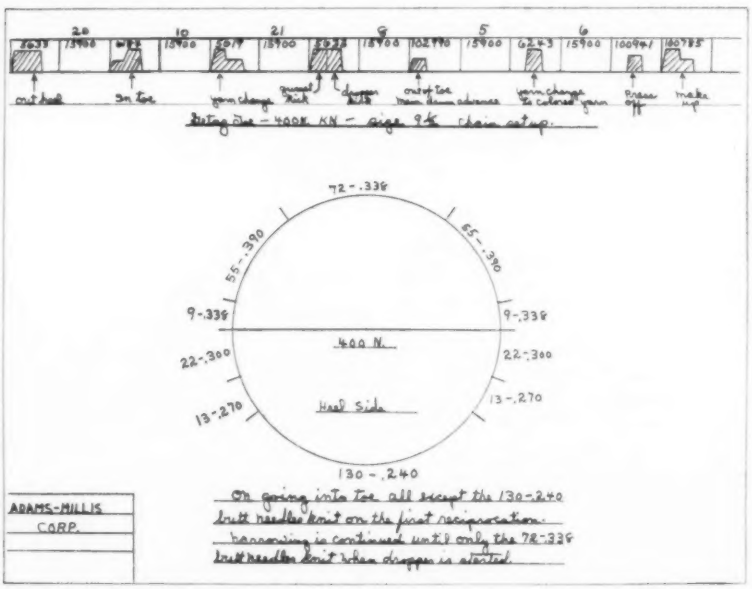
The new construction makes a salable feature at less cost than conventional production methods. The improved toe does not show at all when the stocking is worn, and a fashioned foot is made that fits with a gusset panel so that no seam shows when worn with any kind of shoe.

The panel slenderizes and "streamlines" the appearance of the stocking and makes it fit the foot better. Also, there are no wrinkles on top of the foot as sometimes experienced with conventional seamless hose.

A "nude foot" stocking may be made with this type of closure, which includes a flat butted seam especially developed for the design. 70 stitches per inch of three ends of 15-denier nylon yarn comprise the seam, which is situated and made for comfort to the wearer.

The loopless design eliminates the possibility of the unsightly "dog ears" which sometimes show

Fig. 1. Needle grouping chart and picture layout of pattern chain for 400-needle KN Scott & Williams machine.



loopless toe

looping; the toe is closed by seaming a gusset

on wearers of open-toe shoes.

The seam was perfected on a Model M-4D-45 Merrow seaming machine. The stockings are made on Scott and Williams Model KN 400- and 474-needle machines. Attachments for converting Scott and Williams machines cost about $33 for one machine, and the parts kit number is L-3510. Instructions No. I-3511 explain how to make the conversion, which takes less than three hours on a KN machine.

The machines are not changed fundamentally in the conversion; primarily the change is in the cams. Therefore, operation is routine, and maintenance is the same as usual.

One version of the Getaz toe requires 58 seconds less time to make than a conventional seamless stocking on the same type of machine. Production at Adams-Millis is about 1.06 dozen per machine on an eight-hour shift.

The exact time required to make a stocking depends upon the length of the gusset, which in turn varies depending upon the individual design and grouping of needles.

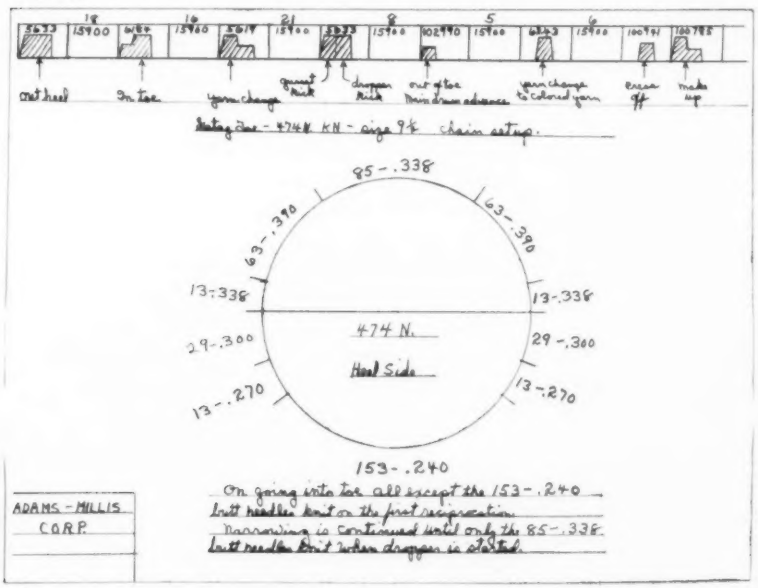
The stockings are knitted on a 3¾″ dial, and the opening is that long for looping with 42 needles per inch on conventional production as compared to 70 stitches per inch on the seamed gusset construction.

It takes six weeks to two months to train a looper operator, at a minimum cost of $500, according to officials at Adams-Millis; but a seamer can be trained in two weeks at a cost of about $80, and a seamer can attain production of 80 dozens in an eight-hour shift to afford a notable labor saving.

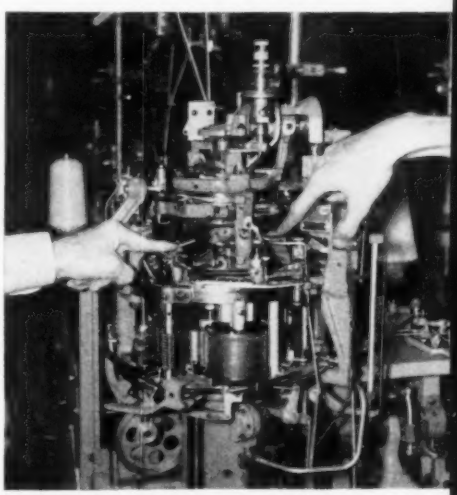
Men's hosiery machines have been converted to make the loopless toe or Getaz toe construction

(Continued on page 131)

Fig. 2. Needle grouping chart and picture layout of pattern chain for 474-needle KN machine.

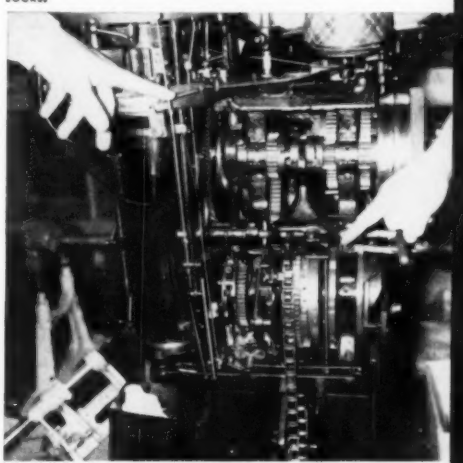


This 400-needle ladies' seamless machine was changed over to make the Getaz loopless toe.



Operatives point to front cams which were changed on this 474-needle seamless machine.

The Scott & Williams machine shown here was converted to make loopless-toe men's socks.



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Yarn dyeing is our specialty. We act as yarn merchants to get dyeing, but we don't dye to make yarn sales. Our 5 plants and our entire organization have but one objective — to provide the best yarn dyeing service available.

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With 5 dye plants, hundreds of package dyeing machines in dozens of sizes and winding equipment to match, we are literally the largest package dyers in the world — ready to dye all types of spun fibres in any quantity.

CONSULTATION

We can help you with your color problems. We have unequalled laboratory facilities, a staff of highly skilled technicians and unequalled experience in time, variety and volume which are at your service.

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Our 5 yarn dyeing plants, strategically located in 5 different textile centers, are conveniently yours. Contact our nearest plant or office.

X-ray view of Franklin Package, the "secret" of uniform shades. Don't say "package dyed". Say "Franklin-Dyed".

711-7

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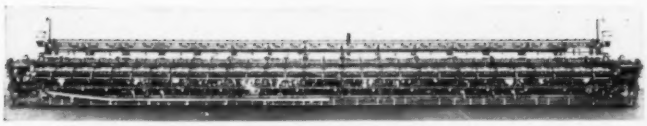
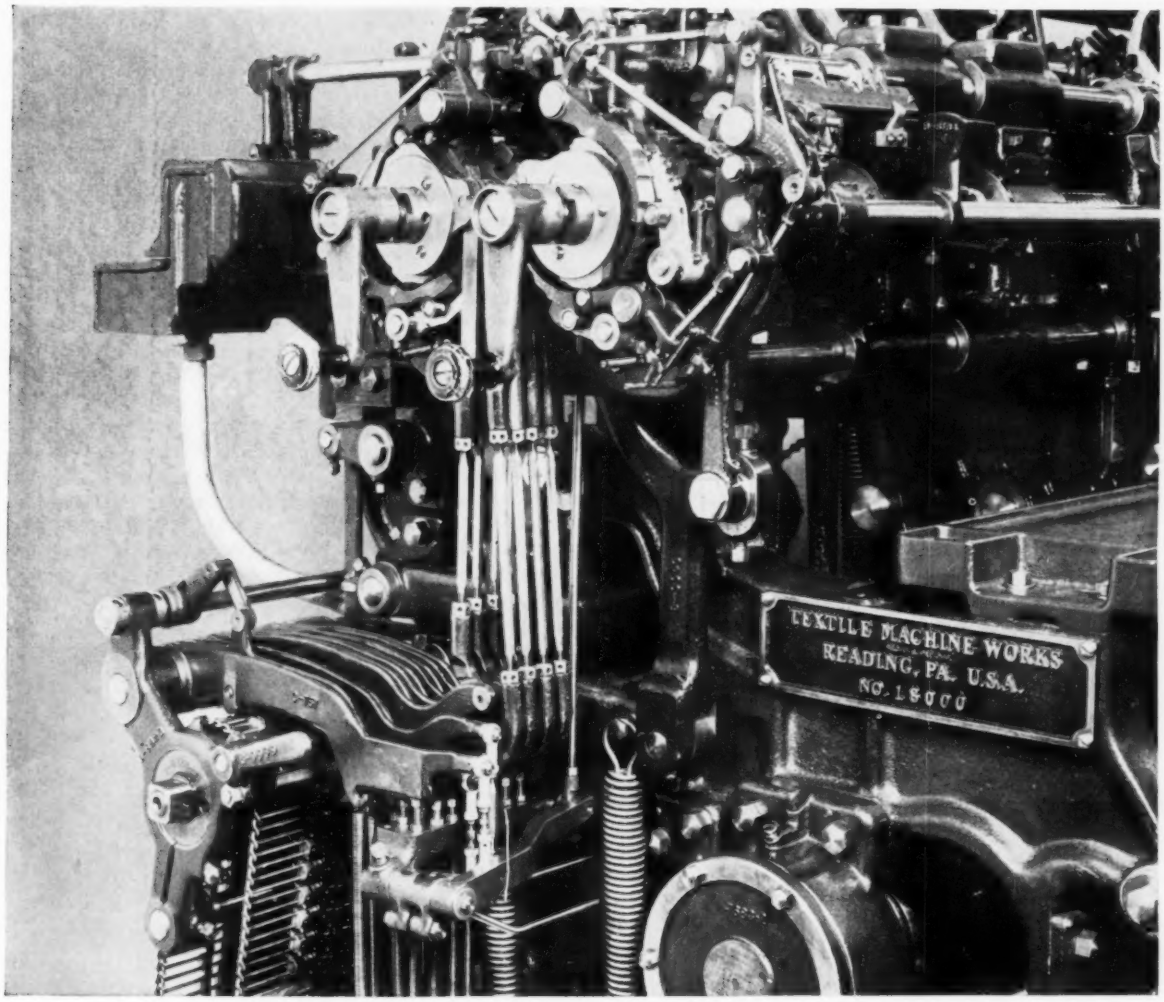
**Trademark for Dupont's polyester fibre



. . . . . the machine that almost thinks for itself



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The Automatic Narrowing Head feature of the "Reading 100" Full-Fashioned Knitting Machine makes possible the knitting of a larger number of stocking styles with a minimum of mechanical changes. Eliminates the possibility of operator error. Narrowing fingers are positioned automatically — no stopping of machine to reposition fingers by hand. Narrowing spindles and carrier spindles are racked out automatically at the end of a set. With the mill-proved "Reading 100", you get continuous, uninterrupted production of fine quality stockings at lower per dozen costs, and the operator can earn more money.

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The "READING 100"
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The "Reading" CK-A Circular Knitting Machine • The "Reading" Tricot Machine • The "Reading 100" Full-Fashioned Knitting Machine
The "Reading" Full-Fashioned Outerwear Machine • The "Reading" Braiding Machine • Textile Spring-Beard Needles • Arrow Latch Needles

How to knit Saaba

The critical points are:

Balanced torque

Uniform tensions

Stitch size

Separation of lots from different sources

by Chester J. Dudzik
Universal Winding Co.

SAABA yarn is a development which is an outcrop of research on false-twist stretch yarns. It is actually a reprocessed Superloft or Fluflon false-twist stretch yarn which results in a uniform textured yarn. To date, most commercial Saaba has been made of nylon, but Dacron and other thermoplastic yarns can be used.

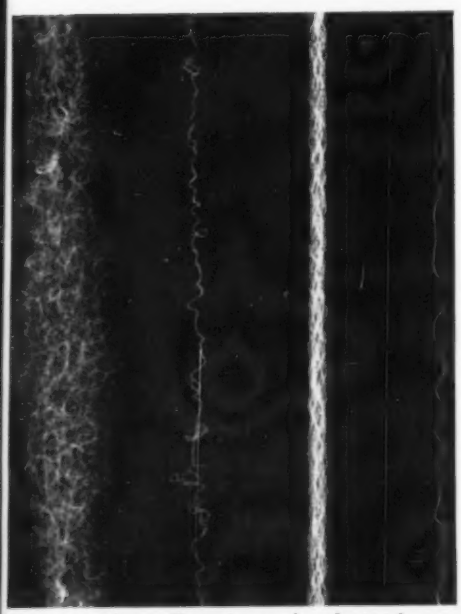
Superloft or Fluflon yarns from which Saaba is made are torque stretch yarns. The stretch in the yarn is achieved because of two separate and distinct factors. The first factor is the crimp, which is obtained by twisting the yarn. The second factor is the torque imparted to the individual filaments, which causes them to twist on themselves.

In producing Saaba yarn, the degree of curling of the filaments can be varied depending upon the type of texture desired, but the change in the crimp is kept to a minimum, for it is the crimp which actually bulks the yarn and gives the resulting fabric its appealing hand.

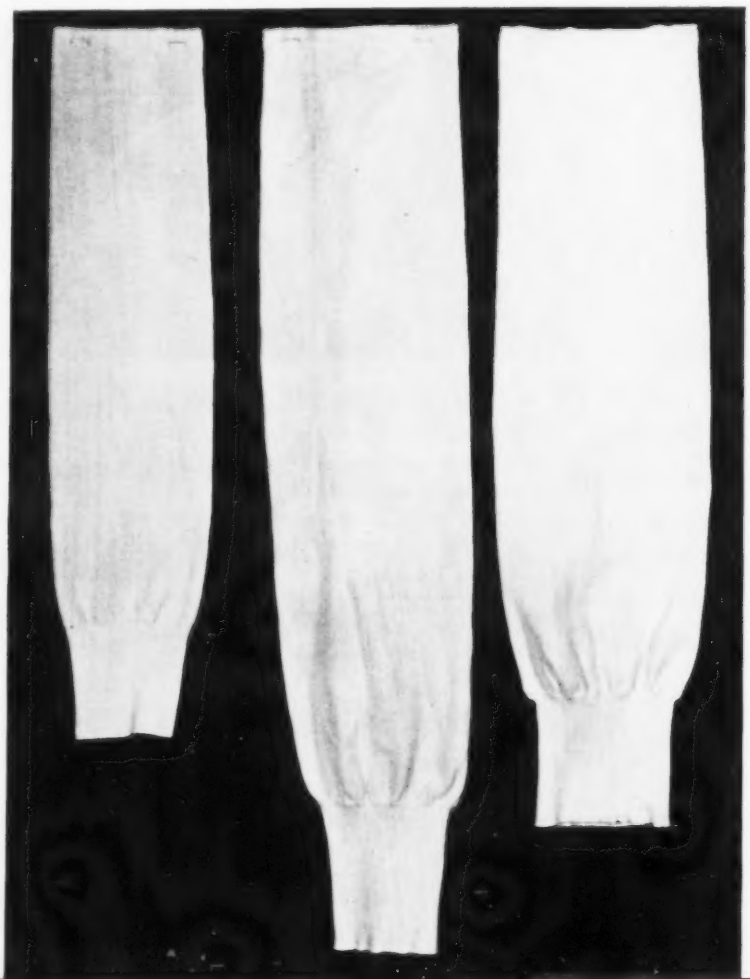
Texture Can Be Varied. Depending upon the applications for which it is to be used, Saaba can be made with any skein length from stretch to filament, and any texture ranging from a rather stiff fabric which appeals to men to a very soft cashmere-type fabric which appeals to women. This control is achieved by modifications of the machine settings and can be maintained very uniformly both within a lot and from lot to lot.

If knitters purchase yarn from more than one supplier, unless all of the suppliers make exactly the same yarn, it may take some cooperative experimentation on the part of the knitter and throwster to duplicate yarns.

From a paper presented at the recent annual meeting of the National Knitted Outerwear Association.



Above: Photomicrographs of stretch yarn and corresponding filament, left; Saaba yarn and filament, right. Saaba is actually reprocessed false-twist stretch yarn; most commercial Saaba has so far been of nylon, but Dacron and other thermoplastic yarns can be used.



Right: These three sweater blanks were made from yarns which were processed at various degrees of skein shrinkage. The blanks all weigh the same, were made from the same stretch yarn, and were knit on the same machine without stitch or other modifications.

To date Saaba yarns have been knit mainly in interlock and full-fashioned fabrics, from 70/2 and 70/5 types respectively. Also 200/2 yarns have been knit into bulky fabrics, both on flat bed and circular machines.

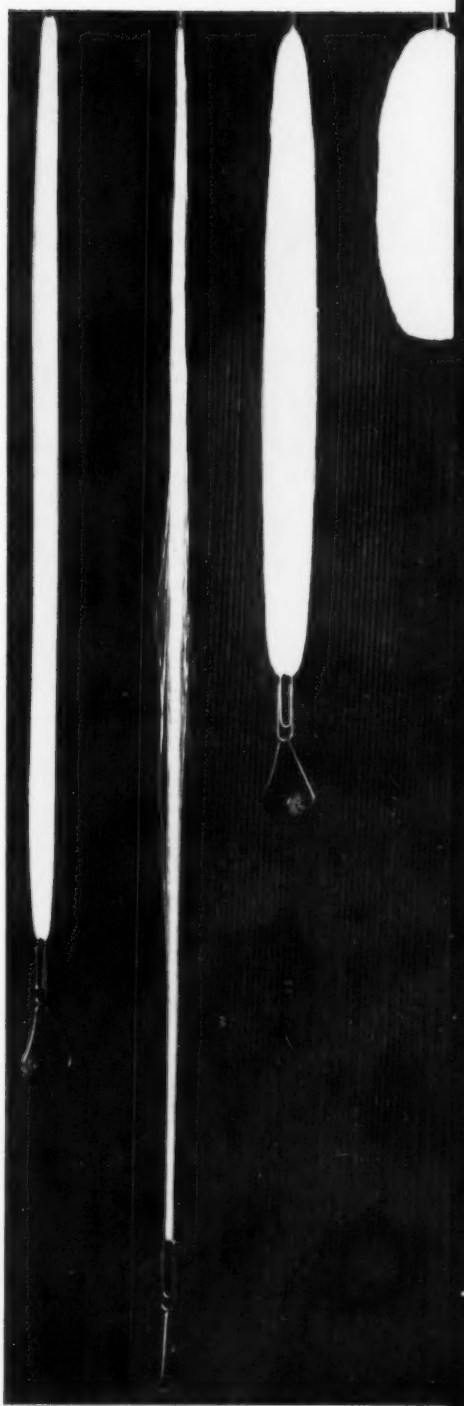
These bulky knits can also be made in various textures, depending upon not only the manner in which the yarn is made but also on the filament count used in the yarn; lower filament count yarns of equivalent total denier result in harsher fabrics than do higher filament counts. Saaba yarn has been, and can be, made in deniers from 20 to 2100.

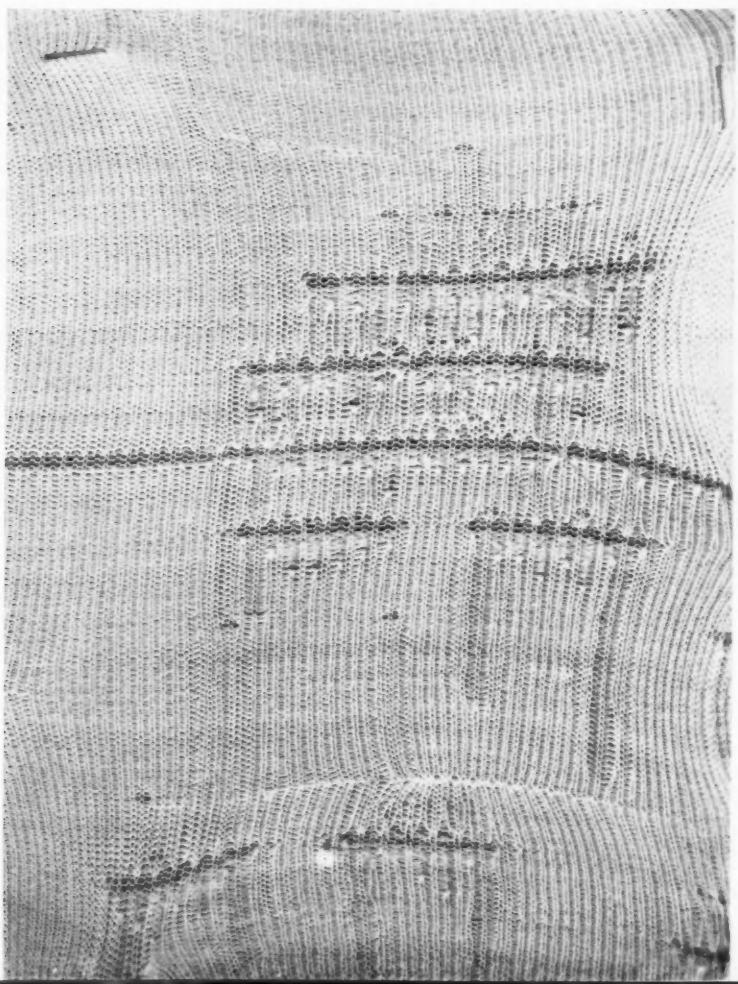
Torque Must Be Balanced. Knitters should be aware of the fact that Saaba yarns are actually torque yarns and that unless they are balanced either within the plied ends or from end to end by proper creeling of the knitting machine, the final knitted fabric will have a torque in one direction or the other which will tend to twist the finished garment.

Most of the yarns used commercially, for example 70/2 for interlock and 70/5 for full-fashioned knitting, are balanced within themselves. However, there have been occasions when knitters have used single 70s or single 200s. In these cases, unless a twist is inserted in the singles yarn to balance the torque, it is essential for knitters to set alternate cones of "S" and "Z" on the creel.

Additional twist reduces to some degree the final bulk in the yarn. Since most outerwear knitters do not make fabrics utilizing singles yarn, it has not been necessary for them to pay too much attention to this torque effect. For the future, however, various fabrics are visualized in which single end yarns may be better from both the economical and functional standpoints.

At times machine operators make errors in producing the yarns and do not balance out the torque in the ends. A cone of such





Above: Reading from left to right, skeins of Saaba, untreated filament yarn, weighted skein of stretch yarn, and unweighted stretch yarn. All skeins have the same amount of yarn, and weights are the same. The differences in elongation and recovery are obvious.

Left: This is what can happen when Producer B's Saaba is substituted for Producer A's, on a knitting machine set up for Producer A's yarn. A's yarn had more relaxation, giving a slightly stiffer fabric than did B's, so the machine was set for a longer stitch.

unbalanced yarn mixed in with other cones of properly-made yarn will result in a streak in a multi-feed fabric. The streak is clearly visible and distinguishable from the balance of the fabric by the manner in which the course slants. Depending on the direction of unbalance, the course will either be slanted upwards to the left or upwards to the right. This can be quite easily spotted in an unrelaxed fabric.

However, unless the condition is minimal, this yarn will probably never reach the needles of the knitting machine, because of the fact that the torque in the yarn will cause it to pigtail prior to the stop motion and it will either jump out of the stop motion or become entangled in the machine parts and break. Therefore a knitter should be able to spot this type of fault quite easily and remove the yarn from the creel.

Saaba yarns may also be found which have been improperly treated in that one end of the yarn does not have a sufficient degree of crimp. This fault can also be easily spotted by observing the sheen of the package; such cones will be very shiny and will stand out from the rest of the supply packages. Throwsters apply a quality control system which minimizes the possibility of such yarn ever leaving their plant.

Knitting With Saaba. Much has been learned to date about knitting Saaba yarns. For best results, the tensions on the knitting machine should be uniform from feed to feed. Normal tension variations of three to five grams are not harmful; however, if they can be avoided, it is advisable. Likewise, tension compensators are not essential in knitting Saaba, but they do make an improvement in the fabric.

The situations that must be eliminated in knitting Saaba are conditions of a very high or low tension such as results when yarn becomes completely wrapped around thread guides or tension posts, or when the yarn does not even pass through the tension disk or assembly.

The factor which is most critical in knitting Saaba yarns is the stitch size. It has been noted when visiting mills where machines are normally set by eye or by lipstick methods, that occasionally the course length varies as much as ±15% of the nominal. This is disastrous and must be avoided.

This condition shows up most severely in interlock fabrics when alternate courses are long and short. In this instance the fabric appearance is one of ridges either along the course or within the course. These ridges show as feed streaks in the fabric. The appearance of these streaks can be compared to the marks left by a gear had it rolled over the fabric. To insure uniform stitch size, it is suggested that the knitting machine be checked and adjusted periodically using a yarn meter.

Knitted outerwear fabrics made of Saaba yarn are cut, sewn, and finished in the same manner as fabrics knit from other synthetic filament bulk yarns. The procedure used is normally that of knitting, relaxing, steaming, cutting, sewing, thermosetting, bleaching, dyeing, and drying.

Wash tests indicate that Saaba sweaters shrink a maximum of 7%, this maximum occurring in the neck opening of the sweater. The average shrinkage is 4% and almost all occurs during the first washing. These results cover thermoset sweaters — thermosetting is recommended for all garments made of Saaba yarns. Further experiments conducted on the sweaters indicate that the shrinkage lies within the same limits above even when the garments are washed and dried in home laundry equipment.

Saaba yarns have been package dyed successfully by commercial dyers with so little change in the yarn characteristics that untreated yarn can be knit with dyed yarns without difficulty or adverse effects in the fabric. These package-dyed yarns have been used in Jacquard knitting for both sweaters and swimwear.

So far Saaba yarn has been used most extensively in sweaters; however, other uses which are gaining market acceptance include socks, tricot garments, foundation garments, swimwear, and woven fabrics. One of the largest elastic-fabric knitters is presently knitting the majority of his 1959 swimwear samples from package-dyed Saaba yarn in both solid colors and Jacquard styles; he expects that the greatest portion of his production will be along these lines.

Our company will license suitable manufacturers to use the Saaba trademark on a royalty-free basis.

Self-selection, fashion and quality key hosiery approach

■ HIGH fashion, self-selection, and quality are the highlights of an original women's hosiery display unit for the "Luron" brand now being introduced by Glen Raven Knitting Mills, Inc., in selected supermarket chains, department stores, and drug chains across the country.

The Luron style selector unit, according to James P. Kinard, executive vice-president in charge of Glen Raven sales, "gives the self-selection shopper the same fashion, fit, quality, and color selection that she associates with the finest women's retail shops."

Russel H. Colley, consultant to Glen Raven and designer of the unit, said it provides today's discriminating shopper with "a showcase of fine hosiery that is in keeping with the age of simplified self-selection, assured quality value, and fashion authority." It provides a tremendous variety of styles, colors and sizes, giving the consumer exactly what she wants in a 10-second, instead of a 10-minute, transaction, Mr. Colley added.

Two pairs of stockings are packaged in a clear-view styrene box with re-use value for jewelry, bobby pins, or even Dad's fishhooks.

Lighted-colored transparencies of fashion photographs at the top of the display unit depict the occasion for which each style is worn. These same fashion-plate pictures appear on the box for easy identification of style and attractive feminine packaging.

The Luron style selector more than doubles merchandise on display per square foot of floor space, according to Gilbert T. Owren, general sales manager.

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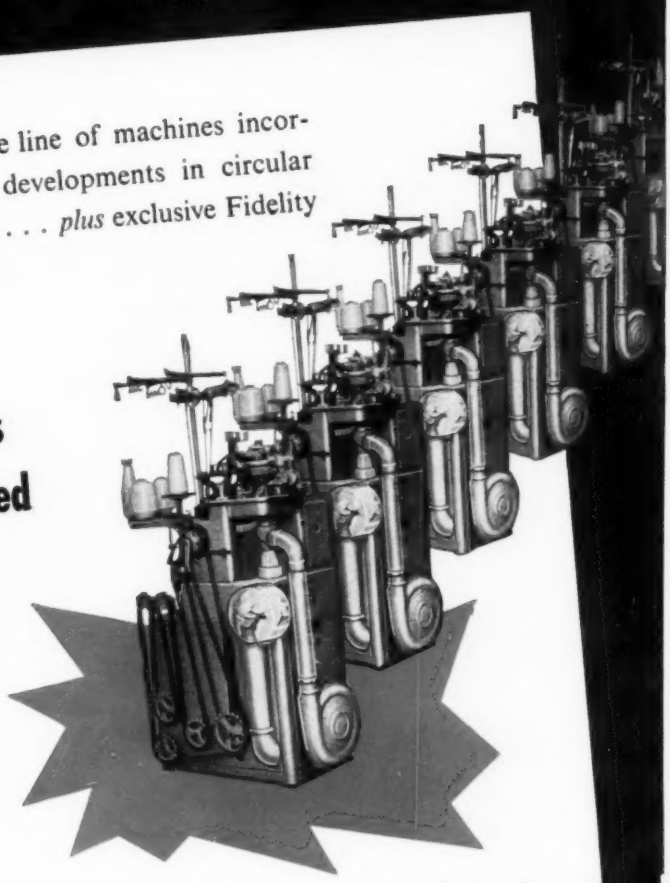

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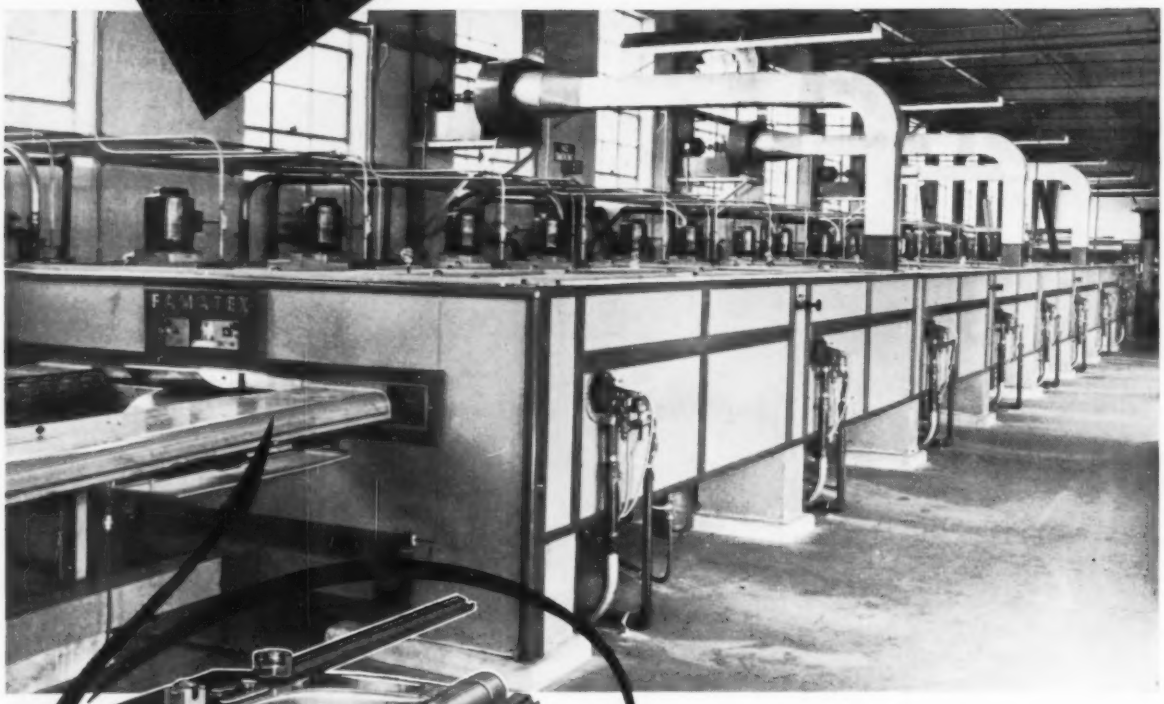

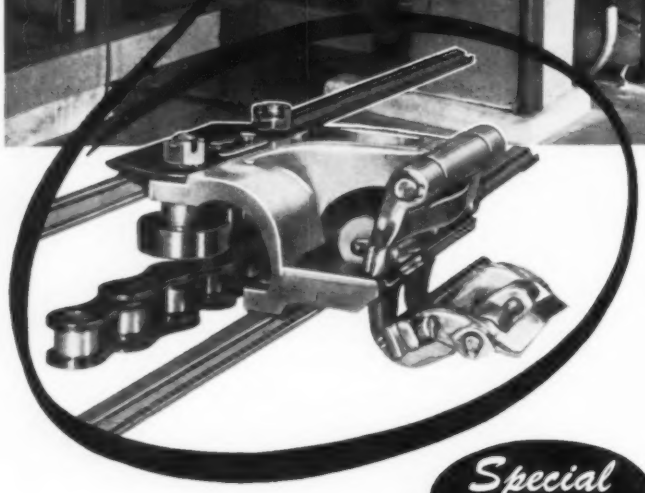

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- Combined pin and clip chain link (Special pin chain link for knitted fabrics).
- Ball Bearings and graphite sliding surfaces eliminate friction and oiling problems.
- Most modern Gas heating system provides unusually high drying capacity and a wide range of temperatures (250° F to 450° F) — individually controlled in each chamber.
- Exceptionally uniform jet air flow.
- Efficient over-feeding and weft-shrinking devices.

YOU CAN SEE THIS MACHINE IN ACTUAL MILL OPERATION — phone for appointment — and learn how to get better drying and top quality production.

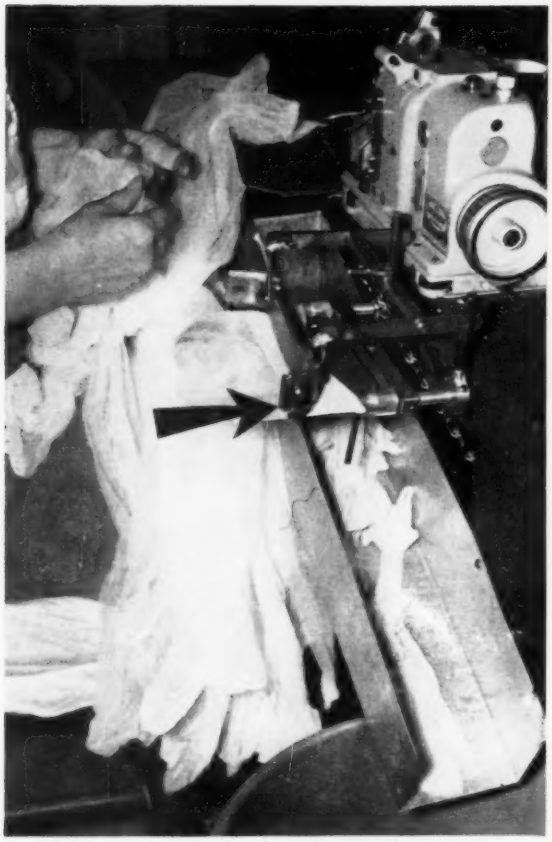
ROBERT REINER, INCORPORATED

Telephone: UNion 7-0502 — From New York City call LOngacre 4-6882

WEEHAWKEN *(Only 10 minutes from Times Square by direct bus)* **NEW JERSEY**

An Honored Name in Textile Machines Since 1903

Loopless toe *(from page 123)*



Special foot-operated bracket (arrow) mounted at seamer marks seaming line with fugitive tint. It was made and installed by the mill.

Loopless-toe stockings are seamed in tandem; before thread is severed on one seamed stocking, another is inserted in the machine.

at Adams-Millis Corp. However, the change is much more expensive and not so simple to make on 176-needle spiral Scott and Williams machines and SCP and SCOP Hemphill models. Essentially the same end result is accomplished on men's socks upon making the changeover.

James L. Getaz developed the innovation, with the cooperation of Adams-Millis Corp.; and James L. Getaz and Henry Pope, Jr., president of Bear Brand Hosiery Co. have assigned patent and patent application to the United States Trust Co. of New York. Patent benefits are available to manufacturers on a license agreement for 6 cents a dozen royalty on ladies' hose and 3 cents a dozen on men's socks and misses' anklets.

Adams-Millis Corp. was the first licensee; Bear Brand second.

Hosiery Package *(from page 121)*

cated cardboard boxes are fed to the machine, which applies the cellophane overwrap and heat-seals the package.

Two operators are needed. One feeds boxes to the machine, and one removes the finished packages. Both operators inspect boxes and wraps. A special box feeder magazine is used.

Operators like the machine and enjoy working on it, and 20,000 to 30,000 dozen pairs of hosiery are finished and packaged here per week. Upon removal from the machine, the boxes are immediately packed in shipping containers. The containers hold 12 boxes of two pairs each.

About 33 square feet of floor space are required by the packaging machine, and about 450 square feet total area is used for the operation.

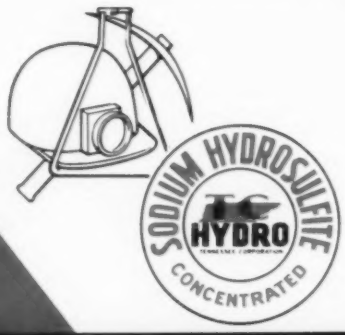
The automatic packaging machine is inexpensive and dependable to operate, superintendent Curry explained. It is versatile in that different size boxes may be accommodated in a minimum of time required for changes. Maintenance is confined to routine and oiling once a day.

The entire unit is operated by a small electric motor with negligible power requirements, and the heat-sealing element operates on 110 volts. Package sealing requires a temperature of 400-500 F at the sealing element.

This mill is using the Hayssen Model 81LU wrapping machine.

TC
TENNESSEE CORPORATION

HYDRO



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CONCENTRATED

TC-HYDRO is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust free, assuring highest stability and uniformity.

AS MINERS OF SULFUR BEARING ORES

We have utilized our basic position in Sulfur Chemistry to produce another product of highest purity and quality for use in the Textile Industry.

WHEN YOU NEED IT—

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Phone, Wire or Write for literature and test samples if desired.

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Order M&W TENTERETTES

A Small Tenter For Your Special Needs

M & W Tenterette: 30", 80" or 100" long, using our No. 12 tenter clip. We build to any maximum width, with either straight or hinged rails. Serves many uses.

These short tenters are made *only* by M & W — one of our specialties, developed to answer special needs in many foremost finishing plants.

We can promptly supply full data — advise you how M & W Tenterettes, and other devices like our Constant Tension Batchers, can fill long-felt needs in your plant that no other machinery satisfies. Write today for information on —

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√ *Tenterettes*
√ *Constant Tension Batchers*

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TO PRODUCE MORE... FASTER...

What do your frames need?

- Conversion to big packages. . . .
- Ball bearing tape tension pulleys to replace those old, sticky, plain bearings . . . .
- Individual drive pulleys on steel shafting, with heavy duty ball bearings to replace those out-of-balance "tin" cylinders. . . .
- Ball bearing jack studs with silent chain drive, to replace those noisy gears . . . .
- New anti-friction spindles in any size or type for spinning or twisting. . . .
- Complete rebuilding to incorporate the above, and increase build, to produce bigger packages. . . .

MEADOWS Established 1921

MANUFACTURING CO. . . . . ATLANTA, GEORGIA

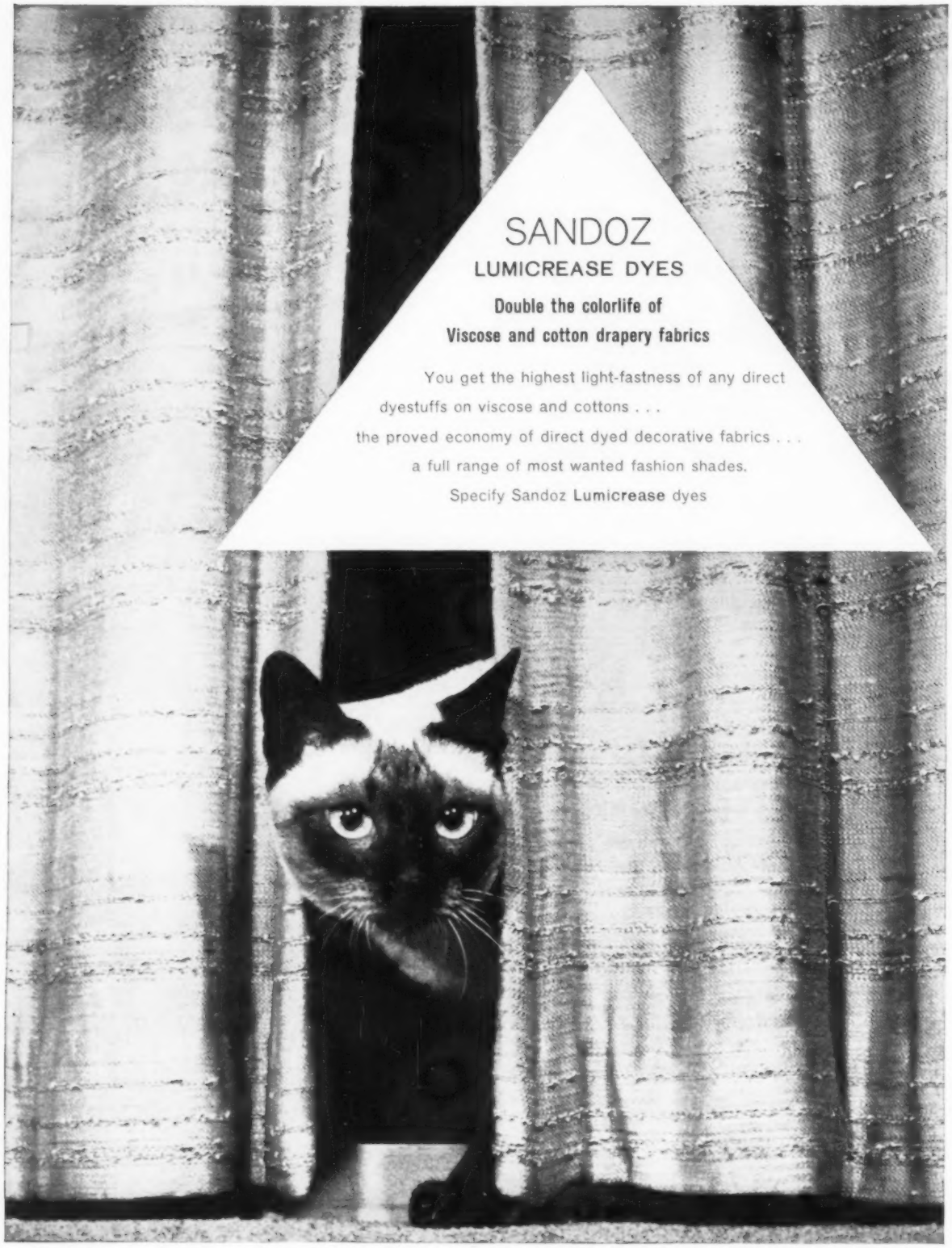
SANDOZ
LUMICREASE DYES
Double the colorlife of
Viscose and cotton drapery fabrics
You get the highest light-fastness of any direct
dyestuffs on viscose and cottons . . .
the proved economy of direct dyed decorative fabrics . . .
a full range of most wanted fashion shades.
Specify Sandoz Lumicrease dyes

Photo by Walter Chandoha

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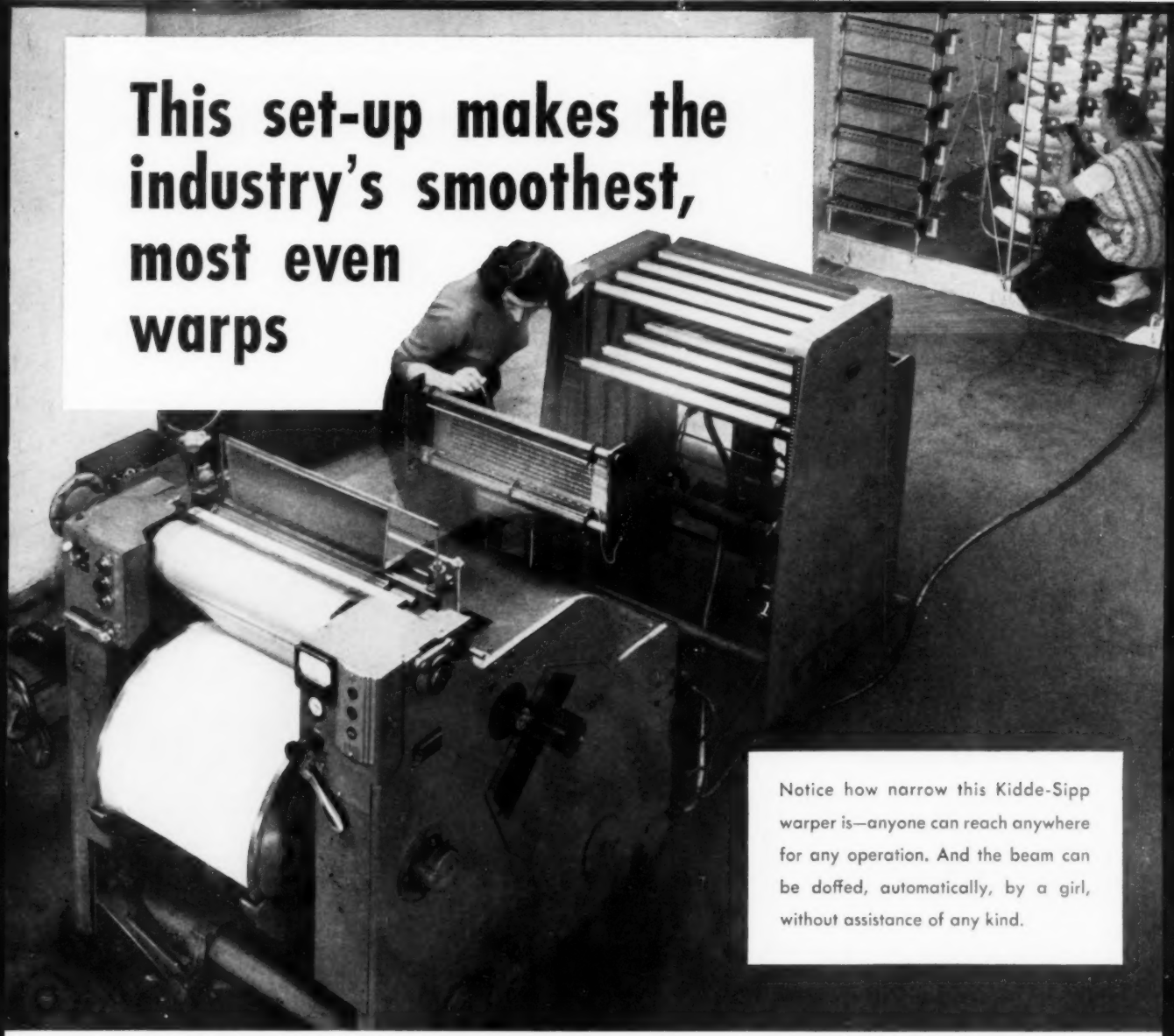
61-63 VAN DAM STREET, NEW YORK 13, N. Y., ALGONQUIN 5-1700

This set-up makes the industry's smoothest, most even warps



Notice how narrow this Kidde-Sipp warper is—anyone can reach anywhere for any operation. And the beam can be doffed, automatically, by a girl, without assistance of any kind.

it's the KIDDE-SIPP warper with accumulator and creel

The smoothest, most even warp beams available today are being turned out by Kidde-Sipp warpers . . . particularly when backed up by a Kidde-Sipp accumulator and a Kidde-Sipp Creel. Here's why:

Yarn is never scuffed on the warper because brakes on the measuring roll, compression roll, and beam are all synchronized electrically. Furthermore, yarn builds up evenly because the compression roller has 2 hydraulic cylinders, one at either end (instead of just one in the center). The balanced pressure that results gives you perfectly even build-up of yarn. And the hydraulic cylinders produce uniform cushion pressure so that the compression roller will not chatter or bounce.

The accumulator is electrically synchronized with the warper, so that, when the yarn must be backed off to recover a broken end, proper tension is maintained. And even the heaviest packages won't sag out of alignment on the versatile Kidde-Sipp Creel. New, stronger package holders and adapters are the reason. They are made of aluminum, which also puts a stop to rust rubbing off on the yarn.

There are a lot more reasons why you get a better beam with Kidde-Sipp Warpers, Creels and accumulators. Find out more about them by writing to:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — JOHNSTON BUILDING, 212 SOUTH TRYON ST., CHARLOTTE, N. C.

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MOYNOS®

even pump non-pourable pastes!

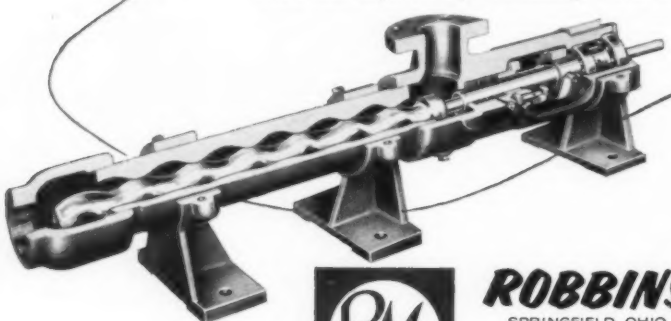
. . . and move corrosives without excessive wear!

Moynos can pump any textile liquid that can be forced through a pipe, even if they're highly viscous or corrosive.

A screw-like rotor revolving in a double threaded stator forms progressing cavities which move all fluids smoothly through the pump, including thickeners or starch size. Corrosive liquids like acid solutions, dye and chlorine do not cause internal wear, because the rotor and stator can be made of special resistant materials. Moyno is the only pump that can satisfactorily handle caustic alkali solutions without causing foaming or aerating.

Many textile mills have drastically cut downtime on mercerizing and sizing machines by installing Moynos to replace rotary pumps which wear quickly and lose capacity and suction characteristics.

Moynos are available in capacities up to 500 gpm; pressures up to 1000 psi. No doubt there are many steps in your processing flowsheet where Moynos can cut costs and improve liquid handling. Write for Bulletin 30TI.



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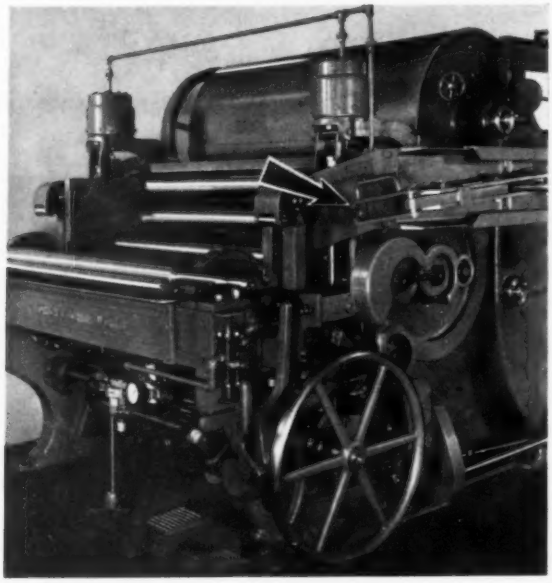
NEW PRODUCT PARADE

Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.

Pneumatic puller starts lap pin

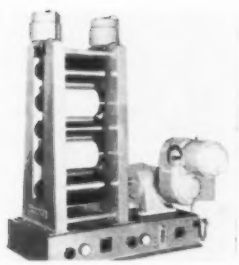


A pneumatic lap pin puller that will free the pin from the densest lap, cotton or synthetics, is available. Exerting a pull of 800 pounds, the mechanism moves the pin for a distance of about eight inches, breaking the "grip" of the lap and permitting the tender to remove the pin with relative ease. The device is designed for installation on existing pickers.

Aldrich Machine Works, Greenwood, S. C.

Do you want more data? Write ◆ or use card on page 151; list G-101

Five-roll calender for lab use



A five-roll calender for laboratory use is furnished as a complete, ready-to-use package. It incorporates either a constant or mechanical variable speed drive complete with magnetic reversing starter, panel-mounted push-button station, full pneumatic controls panel mounted for easy accessibility, individual pressure control to each side of the rolls for either uniform or graduated loading, complete wiring and piping, and infinitely variable loading to 500 pounds per linear inch of face. It is made for table or bench top mounting. Optional equipment includes center wind and friction let-off, supporting stand, and rolls to suit individual applications.

Birch Bros., Inc., 32 Kent St., Somerville 43, Mass.

Do you want more data? Write ◆ or use card on page 151; list G-102

Counter demands proper resetting

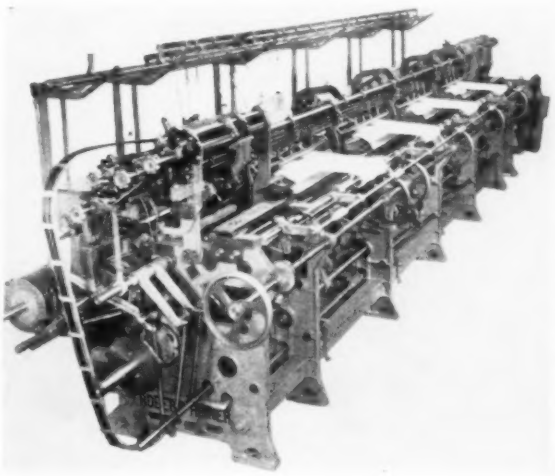
A predetermined Productimeter is geared to record in yards from the delivery roll (such as drawing frame), and it accurately and positively knocks off the equipment at the preset yardage. Called the Model 4-SP-7-1-RS, it is equipped with a "push-in" reset shaft which engages a stop when the counter has been fully reset. This prevents an operator from improperly resetting the counter with resulting over-run and possible frame damage. A special switch in this model will not reset until the wheels are going from 9 to 0 in the resetting cycle, thus eliminating any possibility of not fully resetting the counter and yet starting the drawing frame on its next lot.

Durant Mfg. Co., 1073 North Buffam St., Milwaukee 1, Wis.

Do you want more data? Write ◆ or use card on page 151; list G-103

4-section f-f garment knitter usable in 2 gauges

Now available with double gauge features is an American-made, automatic, four-section, full-fashioned garment (multi-purpose) knitting machine (Cotton's patent) which is suitable for large or small mills. In other words, a machine set for 14 needles per inch can, in a



Why *Moropol 700* is best in

Crush Resistants

Wash and Wear Formulations

Shrink Control Finishes

MOROPOL 700 is ***non-yellowing.*** Fabrics will not yellow because neither the polyethylene nor the emulsifier contain nitrogen.

MOROPOL 700 ***increases tear strength and seam efficiency.*** It eliminates embrittlement, increases abrasion strength, and improves crease recovery and hand. Fabrics retain these qualities even after many washes and dry cleanings.

MOROPOL 700 is a ***pure material.*** Contains no waxes or loading agents.

MOROPOL 700 is also excellent as a self-finish on sheetings and many other fabrics.

MOROPOL 700 is the leader in the fine family of Moretex Polyethylene Emulsions, and Moretex has pioneered in this field. Write for full information today.

MORETEX *Chemical Products,* INC.

314 W. Henry St., Spartanburg, S.C.

Established 1908 Manufacturing Chemists

matter of a few hours, be converted to make 7 needles per inch goods.

A unit of three machines (two four-section 28" body machines and one four-section 32" sleever) will economically knit all sizes of ladies' or men's sweaters.

One of the main features of the machine, called the GM-2, is the fully automatic fashioning and V-neck attachment. It is available with five carriers, constant carrier lead, positive knocking over, four narrowing fingers per section, and comes fully assembled, ready to operate.

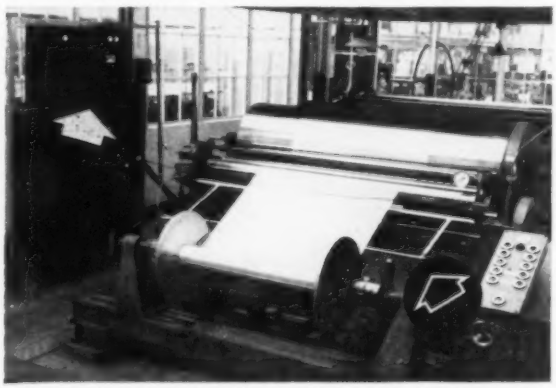
Other features are: Two-speed electric motor and switches, automatic changing from high to low speeds, individually slotted knitting elements, single couliering, automatic stops at any selected point, spindle safety stop, chain setting safety stop, back stop safety, two stitch regulators, one loose course regulator, four transfer bars, and striping attachments, filler points, intarsia, lace.

Robert Reiner, Inc., Weehawken, N. J.

Do you want more data? Write ◂ or use card on page 151; list 6-104

Insures uniform drying of sliver, yarn, or cloth

Substantial improvement in quality and increase in production are advantages to be derived by using the Swiss-made electronic moisture measuring apparatus, the "Humidocontrol," which is applicable to all types of textile drying machines, including those employed with



Slasher equipped with the "Humidocontrol." Note that the moisture detection electrode (black arrow, lower right) is as wide as the machine. Indicating and controlling units are mounted on wall at left (white arrow).

backwashers, slashers, cloth dyeing and finishing equipment, etc.

The instrument, which is now available to mills in this country through a U. S. agent, works without control settings or special calibrations. It insures uniform drying of the material by means of continuous moisture measurement over the whole width, always indicating the most humid part. Automatic speed control apparatus and recorders for use with the indicator are available.

Here is the principle utilized in the operation of the equipment: During the drying of textile materials (sliver, yarn, cloth of any kind of fiber) an electrostatic charge is formed which for the dry materials is greater and for the moist goods smaller. The amount of this electrostatic charge is practically the same for all types of fibers when they approach their normal regain, although their moisture contents are different. The static charge is brought to the measuring device by means of an electrode mounted over the whole width of the goods, and by means of a highly insulated aerial. A graduated, three-color scale on the device makes it possible to ascertain the state of dryness of the goods.

Trumeter Co., 38 West 32nd St., New York 1, N. Y.

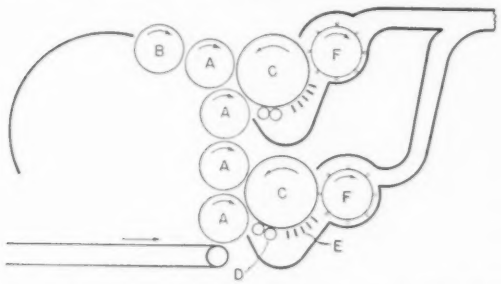
Do you want more data? Write ◂ or use card on page 151; list 6-105

SRRL opener-cleaner commercially available

The SRRL opener has been redesigned to become an opener-cleaner. The machine offers the opening and blending ability of the original unit, plus cleaning action while the stock is in a very open condition.

Mechanically-harvested and roughly hand-harvested cottons are efficiently cleaned at high rates of production. Under pilot scale conditions the machine removed an average of about one-third of the trash in cotton, depending upon the type of cotton and trash, at an output rate of 1500 lb per hr. At lower production rates the cleaning efficiency was slightly higher, and at rates above 1600 lb per hr it was less. (For more details on this evaluation, see TI for April, 1958.)

The machine (refer to the illustration) consists of four

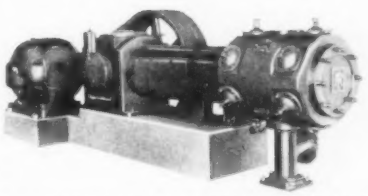


licker-in type processing cylinders "A", one cylinder "B" with rearwardly inclined teeth, two cylinders "C" which remove the small tufts of loosely held cotton from cylinders "A", two pairs of combing cylinders "D" used in combination with grid bars "E", and two revolving strip brushes "F" which remove the cotton from "C" without meshing with the teeth of that cylinder. These brushes also provide some of the air needed for conveying the cotton to the subsequent process.

Davidson-Kennedy Co., 1090 Jefferson St., N.W., Atlanta, Ga.

Do you want more data? Write ◆ or use card on page 151; list G-106

Compressors add no oil to air lines



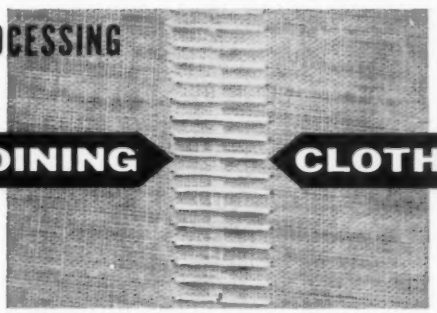
Nonlubricated compressors are being built for heavy-duty service where the air or gas being compressed cannot be allowed to contact oil or other lubricants. The compressors have special cylinders which, due to self-lubricating materials in the piston and packing, require no oil or other lubricants. They use the same frame and running gear as a companion ESH horizontal compressor and are available as vertical units called ESV. The units are built in sizes from ½ to 2000 horsepower.

Ingersoll-Rand, 11 Broadway, New York 5, N. Y.

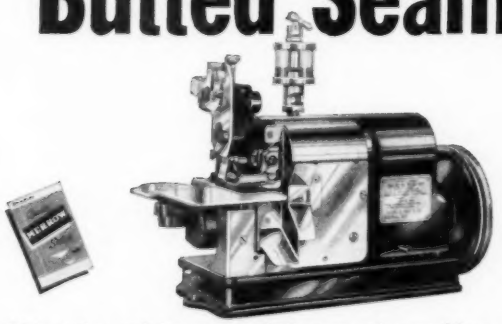
Do you want more data? Write ◆ or use card on page 151; list G-107

for DYEING • BLEACHING • FINISHING • PROCESSING

HERE'S A BETTER METHOD OF JOINING CLOTH



MERROW Butted Seams



Joining piece goods end-to-end with a Merrow Butted Seam improves processing and saves material because:

- Material moves through continuously, speeding production.
- Seam opens *flat* under tension of processing.
- Lack of bulk at seam simplifies calendering, shearing, napping, printing, coating, filling, etc.
- Seam "gives" with material.

Machines may be used in conjunction with several different types of cloth handling equipment and are also available for joining *knitted* fabric for processing.

Write today outlining your particular processing problem. We'll be glad to make recommendations and submit sample stitches on your own material.

TRADE MARK REG
The MERROW MACHINE COMPANY
2805 LAUREL ST. • HARTFORD, CONN. • U.S.A.

major supplier of chemicals for the textile industry

CARBON BISULFIDE exceeds 99.99% purity. Stauffer was the first—is still the largest—producer of this essential chemical. Shipped in tank cars of 8000 and 10,000 gallons from Bentonville and Roanoke, Va., Lowland, Tenn., LeMoyne, Ala., Chester, Pa., and Perry O.; in 5, 10 and 55-gallon drums from LeMoyne and Richmond, Cal.

SODIUM HYDROSULFIDE in aqueous solution of high purity and highest practical concentration is shipped in tank cars of 8000 and 10,000 gallons from Chester, Pa., Roanoke, Va., Lowland, Tenn., and Richmond, Cal.; in 55-gallon drums from Chester and Richmond and in tank trucks from Richmond.

CAUSTIC SODA of 50% and 73% liquid Rayon Grade is shipped in tank cars of 8000 and 10,000 gallons from Niagara Falls, N.Y.

SULFURIC ACID is available in commercial grades of 77.67% to 122.5% H_2SO_4; as Oleum of 15% free SO_3 to 100% liquid SO_3, and as regenerated, water-white 98% H_2SO_4. Shipments in barges, tank cars, tank trucks, drums and carboys from many points in the South, Mid-west and West.

For continuous, dependable, flexible supplies of textile chemicals ... make your arrangements with Stauffer.

STAUFFER CHEMICAL COMPANY

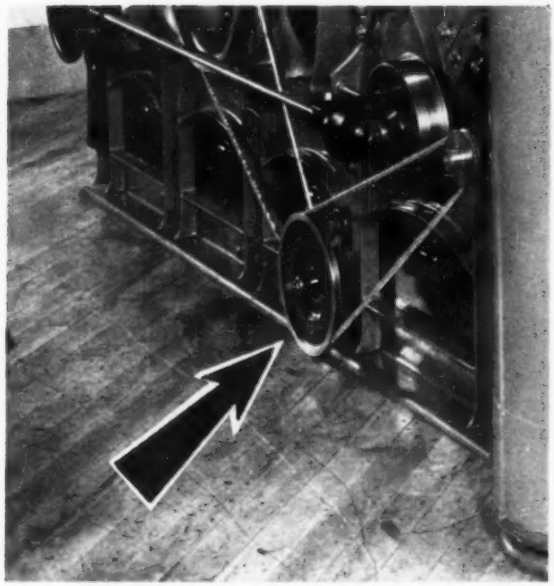
380 Madison Avenue, New York 17, N. Y.

Prudential Plaza, Chicago 1, Ill.

636 California Street, San Francisco 8, Cal.

Stauffer CHEMICALS SINCE 1885

Card binder pulley has ball bearing



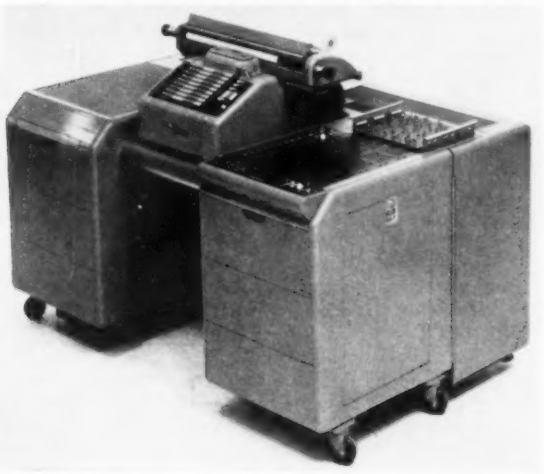
A card binder pulley is available with antifriction bearings which eliminate all oil drip, require lubrication every six months, give smooth operation, and outlive the standard bronze bushings several times over. The subassembly is composed of a standard adapter type ball bearing (wide inner ring) and a new stand and stud.

Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

Do you want more data? Write ◆ or use card on page 151; list G-108

Desk-size computer features pinboard control

A desk-size electronic digital computer that is as simple to operate as a conventional desk calculator—yet performs the automatic operations of a large scale computer—is available. Known as the E-101 computer, it is designed to solve those problems that are too complex for efficient solution on desk calculators, and yet too small for economic solution on the larger electronic data processing systems. Combining the advantages of both types, this machine serves the middle range of computation, at low cost and with great savings in technical manhours.



Pinboard programming is an exclusive feature of the computer. Program storage is accomplished by pin settings in eight removable pinboards. Instructions to the computer, which is only 60 inches wide and 38 inches deep, may be fed through the 11-column full keyboard or automatically from its compact paper tape input unit. An operative can master the technique in a few hours.

Production cost analysis and material inventory and control are typical of the business problems which can be solved with the machine. Engineering, statistical, and mathematical calculations can also be handled by this machine which does not require special air conditioning or humidity control.

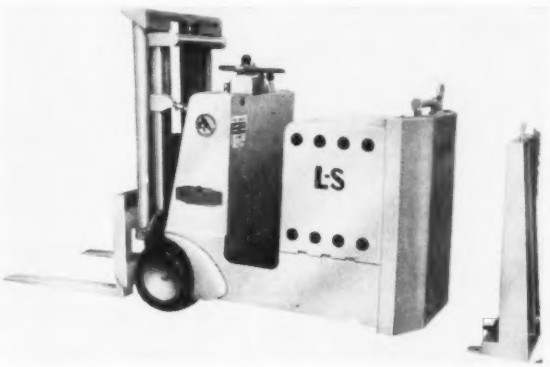
Some other features of the equipment are: operating flexibility—it is designed to operate either automatically or with operator intervention; 20 additions or subtractions per second; 4 multiplications or divisions per second; automatic address modification; simple expressive instruction symbols; 220-word storage capacity on magnetic drum; optional tape input and output.

ElectroData Division, Burroughs Corp., 460 Sierra Madre Villa, Pasadena, Calif.

Do you want more data? Write ◆ or use card on page 151; list G-109

Heavyweight-lightweight lift truck

A dual-capacity electric fork lift truck, called the Model E Multi-Master, has a standard capacity of 2000 pounds at a 48" load level. By adding a quickly removable counterweight to the truck's rear, its capacity is immediately doubled to 4000 pounds at a 48" load level. Without the counterweight the truck can operate on low-capacity floors or in highway truck bodies as a 2000-pound fork lift; but when a 4000-pound capacity lift truck is needed in other areas of the building, the counterweight fulfills the need. The truck is also adaptable to situations where extra capacity is required due to the use of such attachments as crane arms, for extensions, towing eyes, etc.



A stand for the counterweight, included as standard equipment, makes removing or replacing the counterweight only a matter of loosening two bolts. The entire operation takes less than two minutes. To remove the counterweight, the operator backs his truck against the stand. He then loosens the two bolts, and the counterweight automatically drops into the stand and is held in place by a chain. When the counterweight is to be placed on the truck's rear, the process is reversed.

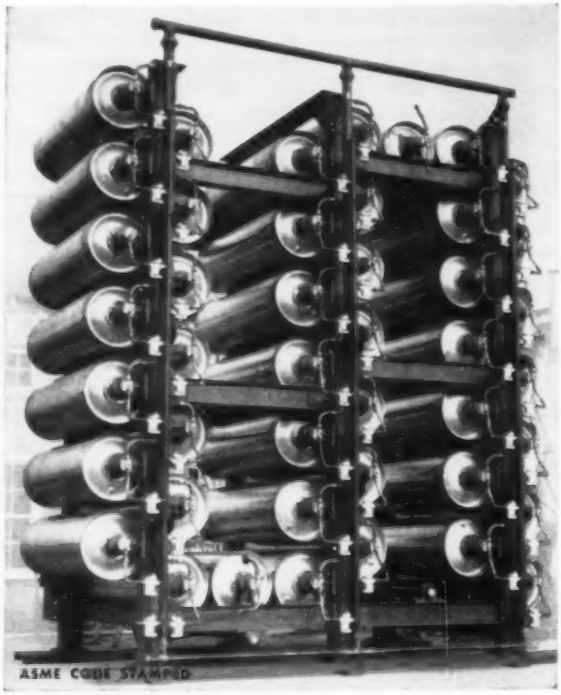
Lewis-Shepard Products, Inc., 125 Walnut St., Watertown 72, Mass.

Do you want more data? Write ◆ or use card on page 151; list G-110

PROVEN SUPERIOR

In actual day to day operation where the real worth of machinery is tested, Sims new Stainless Steel 75 psi reversed dished head 44 Dry Cans* are proven superior. They require less horsepower . . . are easier on bearings . . . and save floor space with no loss in drying surface. And, the chain drive is on one side of the can, while the steam fittings are on the other side . . . permitting maintenance of the drive without time lost waiting for steam pipes to cool.

Furnished Teflon-coated if desired.



Fabricated and installed at Lanett Bleachery and Dye Works, Lanett, Alabama by Sims Metal Works.

FOR ECONOMY AND QUALITY
Our modern and progressive metal-working shops, our skilled craftsmen, our know-how—these are guarantees of quality. For custom tailoring of stainless steel, call, wire, or write *now*.

*U. S. PAT. OFF. NO. 2779104

Sims METAL WORKS
WEST POINT, GA.

Fabricators Since 1928

United States Supply Co., 888 Broadway, East Providence, R. I.
Harley D. Hohm, Inc., 128 Buist Ave., Greenville, S. C.
Friday Textile Machine & Supply Co., Gastonia, N. C.

Rings and travelers run faster, wear longer

Short breaking-in periods, higher traveler speeds, and longer ring life are advantages offered in the Speed-Tex and Model O1C Speed-Tex spinning rings—the ring finish, a surface metallic alloy, is gradually altered by the traveler to provide a final finish that is obtained at low temperatures without softening the initial case hardness of the basic steel ring. The Model O1C has a special flange contour which permits higher traveler speeds in large package spinning. The inner flange, bearing surface of the traveler, is full width to provide a wide, steady traveler path. The outer flange, not a true bearing surface, has been sharply reduced in width. A wider traveler may thus be used with the ring without changing the traveler weight.

A special wider traveler is offered which is made with a small circle resulting in a low center of gravity. The combination of low center of gravity and increased width result in better traveler balance, more stable operation, and better running conditions. The added bearing area reduces the traveler wear.

The rings require only about four or five traveler changes, on the average, to effect complete breaking-in.

Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

Do you want more data? Write ◂ or use card on page 151; list G-111

Automatic presser for textured yarn sweaters

Improved quality of finish in any sweater, pullover or cardigan of modified filament yarn is obtained by using a new Paris steam-air finisher designed especially for doing the initial and final pressing of these garments.

With the exception of placing the garment on and removing it from the machine, every step of the pressing process is completely automatic. This advantage means that the quality of finish and rate of production are not dependent on the skill of the operative. Consequently, any unskilled person can learn to operate the machine in a few minutes. Rate of production increase is often 50 per cent and in some mills it is doubled, when one operator uses two of the Paris units.

To meet the requirement imposed on the initial pressing by the character of the yarn and its necessary thermosetting, special features have been incorporated in this new sweater finisher to complement those of the conventional Paris machine (described in TI for Feb., 1957, p. 218) for automatically pressing ladies', men's, and children's sweaters.

Most important of these special construction features are: (1) Oversize steam lines, separator, and solenoid valve greatly increase the volume of steam; (2) Faster

motor-driven fan in machine base gives quicker steam circulation and penetration of the sweater; (3) 50% more steam coils to increase heat of air to dry and set the finish; (4) Perforated members in both top section and base—to increase and evenly disperse the steam—replace baffles required for the opposite purpose; (5) Framing members newly designed to apply increased, controlled pressure uniformly to entire outline of the sweater.

When the machine is quickly preset, by one manual adjustment to a given size, every sweater comes off the air-expanded framing parts completely pressed and ready for packing: (a) identical in outline; (b) with all specified measurements correct to a plus or minus variation of ½ inch maximum; (c) with enhanced loft and luxurious hand; (d) completely free of all removable wrinkles and pencil lines; (e) with no trace of shine or pressure marks from collar trim, ribbing, seams, buttons or grosgrain.

Garment Finishing Equipment Corp., 18 Brattle St., Cambridge 38, Mass.

Do you want more data? Write ◆ or use card on page 151; list 6-112

Weaves tapes up to 700 ppm

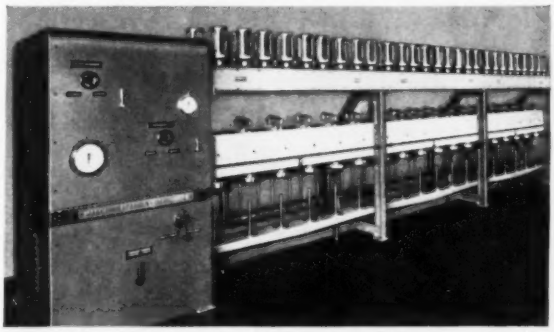
A shuttless narrow fabric loom, available in three models that can make fabrics from ⅜" to 6" in width, including elastics, glass fiber, ribbons, tapes, and webbings, will operate between 600 to 700 single picks per minute, depending on the type and width of fabric. Production is three to five times that of a conventional high speed shuttle loom. Simple in construction and operation, the loom does not require experienced operators, nor does it use wooden shuttles, quills, or racks.

Its main feature is a patented bobbin weaving unit which makes possible an identical selvage on both sides. The filling weaves from a cone or spool. Old looms can be converted on the spot by installing the bobbin weaving units at approximately 60% of the cost of the new loom. The loom is manufactured by Texnovo s.p.a., Milan, Italy.

Snedeker & Company, Inc., Ansonia, Connecticut.

Do you want more data? Write ◆ or use card on page 151; list 6-113

Cord laying machine with stepless speed



A high-capacity cord laying machine, made by Maschinenfabrik Memmingen K.G., West Germany, is available through a supplier in the United States. The

Announcing the **MOST POWERFUL LOW-COST** textile magnet you can use!

New, NON-ELECTRIC SPIKED APRON MAGNET from Eriez improves product quality, reduces direct labor and maintenance costs, increases plant safety.

Here's *positive protection* at a price every budget can stand! Designed and produced by Eriez—*leader* in magnetic equipment for the textile industry—this new Spiked Apron Magnet will protect carding and garneting equipment from damage by tramp iron; prevent fires, machinery damage and costly down time. And it's priced so low you can't afford to be without it!

Nine out of ten mills specify "ERIEZ" magnetic separators when they order—and with good reason. No other manufacturer has the years of magnetic experience, the know-how or the skilled field and laboratory staffs that Eriez has. No other manufacturer has solved as many magnetic problems for the industry. Eriez Spiked Apron Magnets are available direct or through your original equipment manufacturer—and there's always an Eriez sales engineer nearby to serve your needs.

CHECK THESE FEATURES:

Completely non-electric units; no operating or maintenance costs; first cost is the *only* cost. Magnetic strength is guaranteed indefinitely. Units are self-contained; quickly and easily installed.

MODEL D

ONLY $224
for this big, 36" Spiked Apron Magnet.

Don't delay; mail today!

Eriez Mfg. Co.,
72 G Magnet Drive, Erie, Pa.

ERIEZ HI-POWR MAGNETIC SEPARATORS

( ) Please mail more information on the Model D magnet
( ) Please have your representative call
( ) Please send a magnet for 30 day free trial

*The inside dimension of our feeder is*_____

Name_____
Company_____
Address_____
City_____ State_____

ERIEZ Try one of these dependable magnets on a FREE 30-DAY TRIAL No obligation.

Zinser
TAPERED TOP DRIVE
STEEL BLADE
SMALL WHORL DIAMETER AFFORDS REDUCTION IN CYLINDER SPEED
THIS FILLING SPINDLE
EQUIPPED WITH SKF- ROLLER BEARING -
STEEL BASE WITH RUST-RESISTANT FINISH
MEETS YOUR REQUIREMENTS - CUTS YOUR POWER COSTS

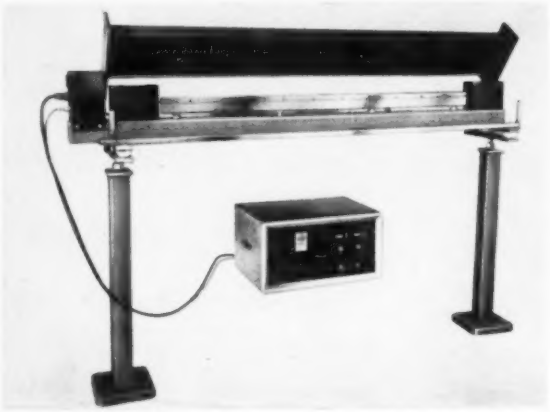
EXCLUSIVE U. S. SELLING AGENTS
WATSON & DESMOND
P. O. BOX 1954 CHARLOTTE, N. C.

machine is made in three models for processing nylon, cotton, jute, flax, sisal, manilla, etc., and is equipped with stepless speed control. The package size and supply and take-up spindle speeds have been increased over earlier models.

A. Schnitzer, 264 Orange Ave., Irvington, N. J.

Do you want more data? Write ◂ or use card on page 151; list G-114

Automatic inspectors for spun or filament yarns



The Lindley Spun Yarn Inspector is an instrument for controlling the quality of spun worsted, wool, cotton, synthetic and blended yarns. It may also be used for the same purpose on multifilament synthetics, but not on nubby or irregular types. An almost identical machine, the Tire Cord Inspector, will detect fluff balls, broken filaments, strip backs, etc., on any type and denier of tire cord yarns. It differs from the above machine only through a minor modification of the electronic control.

When used in conjunction with the warping operation, this yarn inspection device will cause the warper to stop upon the occurrence of defects such as slubs, neps, fly, and double ends in the yarn. The removal of these defects can result in great savings in the subsequent burling, mending, and sewing of the cloth. Also, in the case of fine worsteds and other fabrics that are almost impossible to burl and mend, or for materials where it is too costly, such as some synthetic and cotton fabrics, the application of the spun yarn inspector results in a considerable improvement in quality. Other processes such as simplex knitting and fine cotton weaving are also aided by the use of inspected warps.

These benefits of increased quality, lower burling and mending costs, and less loom and knitter downtime are all obtained at the expense of only a slightly increased warping cost.

The inspector has a specially designed electronic control unit which can pass knots, neps, and other irregularities which are too small in size or length to justify counting or removal from the yarn, yet at the same time catch objectionable defects.

This selectivity is obtained by the use of a double dial control, one for length and the other for size or diameter of defect. These two controls work independently of each other so that a setting may be made to pick up a defect of any length greater than the chosen one which can be between zero and several feet long and for any size defect greater than the chosen one which can have a magnitude between that of a single filament and a sizable slub.

Since the electronic control unit is equipped with a

separate counter for size and length defects, a count of each type is obtained.

Lindly & Co., Inc., 248 Herricks Rd., Mineola, N. Y.

Do you want more data? Write ☁ or use card on page 151; list G-115

Prevents build-up of slime

The buildup of slime, algae, corrosion, and scale in air conditioning, humidifying, and heat exchange equipment may be prevented by the use of a product known as Airefiner No. 54.

When used at concentrations of 2 to 4 pounds per 1000 gallons of water, Oakite Airefiner No. 54 controls scale, keeps the pH of water in the low alkaline range, minimizes delignification of wooden cooling towers, and the deposit of white coatings on equipment. Completely soluble in hot or cold water, the material is not toxic in recommended solution and is unaffected by heat.

Oakite Products, Inc., 19 Rector St., New York 6, N. Y.

Do you want more data? Write ☁ or use card on page 151; list G-116

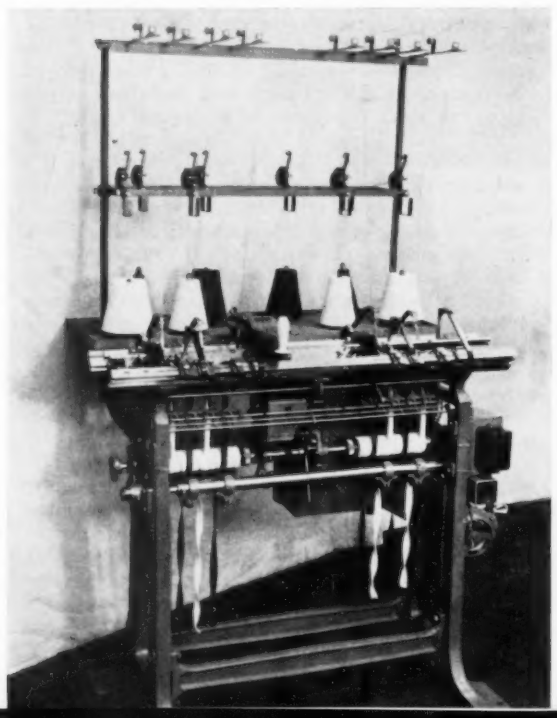
Knit up to 400 yards of sweater trim in 8 hours

Wider stitch variety and higher production are advantages of a new two-head narrow fabric flat knitting machine, two types of which are available.

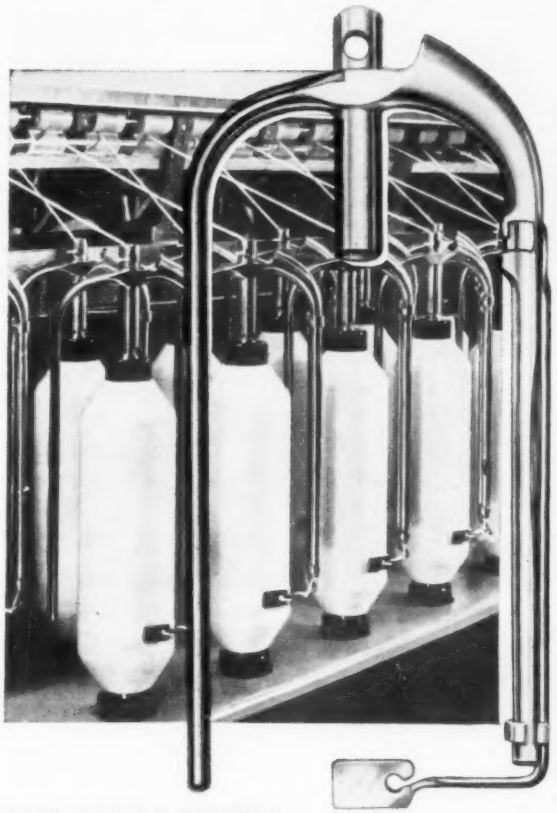
Designated Type MR (two heads) and Type MRHF (two heads), the machines produce fabrics for use as sweater borders, pocket and collar trim, and as cut-in ornamentation in any part of a sweater. Type MR has only one kind of needle and automatic tubular cams; whereas Type MRHF is equipped with high and low butt needles and has both tubular and cardigan cams. Thus the latter type is capable of making, in addition to conventional rib border, trims incorporating cardigan and half cardigan stitches as well as racked cardigan and half cardigan structures. Of course, both machines are set up for racking.

Mechanical features include: Each head equipped with

The Type MRHF narrow fabric knitting machine.



15 to 25% INCREASE
IN WEIGHT OF ROVING—
WILL PAY FOR ITSELF WITHIN
7 TO 24 MONTHS



MAIER PRIMA FLYERS

HEAVY CONSTRUCTION OF SHOULDERS . . . prevents spreading — allows you to extend width of flyer to the maximum permissable by the gauge of your frame.

HIGH POLISH . . . especially in throat and hollow leg—prevents "eye browing" and insures high quality roving.

NOTCHED THROAT . . . puts false twist into roving back to the front roll—preventing excessive ends down.

DESIGN OF DROP PRESSER . . . the gentle angle of the roving as it leaves the hollow leg and starts to wind around the presser finger prevents the breaking away of fibers from the roving.

DYNAMICALLY BALANCED . . . every flyer is balanced at maximum operating speed within a tolerance of ± 3 grams.

ACS FINISH . . . special anti-rust and anti-corrosive finish that will withstand corrosive action of synthetic fibers.

Location of Slot in eye of the presser finger makes threading almost automatic.

TEXTILE SUPPLIES W D USED MACHINERY

Watson & Desmond

P. O. BOX 1954 • CHARLOTTE, NORTH CAROLINA

"Cable-Way" Conveyors reduce costs, transport laps overhead.

American "Cable-Way" has fewer moving parts than chain conveyors, and thus fewer wear points. It is easy to clean and service. Due to lightweight track, trolleys and cable, the existing roof structure is usually adequate to support the conveyor and its load. All-bolted construction makes installation quick and easy. Extensions to systems also can be made readily. Many large textile plants use "Cable-Way" conveyors. Write for Catalog CDA.

CONVEYOR DIVISION
THE AMERICAN MONORAIL CO.
Fourth & Franklin Streets • Tipp City 24, Ohio

three standard yarn carriers, operating on single bars, front and rear; single lock cam boxes in addition to adjustable or auxiliary lowering cams in front; automatic take-up; individual drive.

Both machines are available in cuts from 4½ to 14 needles per inch.

Dubied Machinery Co., 21-31 46th Ave., Long Island City 1, N. Y.

Do you want more data? Write ☁ or use card on page 151; list G-117

New dyes and chemicals

The durable resin softener Moropol 762 is an emulsified epoxy-type plasticizer which will increase the tear strength and add to the crease angle of resin-treated fabrics. It is a nitrogen-free nonionic emulsion compatible with other materials used in resin baths, and which does not retain soil in a laundering operation.

Moretex Chemical Products, Inc., 314 W. Henry St., Spartanburg, S. C.

Do you want more data? Write supplier or use card on page 151; list G-118

A bright orange vat dye has high tinctorial value and build-up for heavy shades in pigment or reduced dyeing by jig, pad, package machine or open bath methods. The dye, Cibanone Brilliant Orange GR Paste, has a light fastness rating of 250 hours or better in medium depth dyeings. Crocking and wash fastness are comparable. Gives good coverage of "dead" cotton.

Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-119

A combination anionic softener and detergent has excellent resistance to yellowing and does not affect the shade or light and wash fastness of dyed yarn. Called Melotone O, it enables the dyer to finish package-dyed and bleached yarn in one operation rather than the two generally required for soaping off and softening.

Proctor Chemical Co., Inc., Salisbury, N. C.

Do you want more data? Write supplier or use card on page 151; list G-120

The red dyestuff Lanasyn Brilliant Red 2BL gives extremely brilliant shades on wool, silk, and polyamide fibers. A homogeneous dye, for application in neutral or weakly acid baths, it may be used for self-shades and as a shading color with the neutral-dyeing premetallized Lanasyns, or with some milling dyes. The shades have excellent lightfastness and are very stable to chrome.

Sandoz, Inc., 61-63 Van Dam St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-121

A nonionically dispersed polyethylene emulsion now available is a versatile, easy-handling, stable, and semi-permanent finishing agent. Effective as a softening and lubricating agent for cotton, rayon, and synthetic yarns and fabrics, and as a speed sewing thread lubricant, Polylube FFN imparts a soft, springy hand and improves drapability when applied to piece goods. It is stable to acids, alkalis, and salts, even in high temperatures, and increases tear strength and crease resistance.

Laurel Soap Mfg. Co., Inc., Tioga, Thompson & Almond Sts., Philadelphia 34, Pa.

Do you want more data? Write supplier or use card on page 151; list G-122

Two Dacron scouring agents are available for cleaning and reclaiming fabrics. Rexosolve BCT is a special agent used to clean and salvage fabrics which have been spotted in the dyeing process. Emkapon DAC is used for scouring Dacron grey goods to remove waxes and sizing com-

pounds which might tend to retard full penetration of the cloth or cause spotting. Used successfully on both jigs and boxes, it permits Dacron to be dyed deeper pastel shades without carrier.

Emkay Chemical Co., 319-325 Second St., Elizabeth, N. J.

Do you want more data? Write supplier or use card on page 151; list G-123

A direct dye producing yellowish-orange shades is fast to light and highly resistant to effects of resin treatments on cotton and rayon. Styled "Pontamine" Fast Orange DL, it can be used as a self-shade or as a shading component in compound shades on spun rayon with resin aftertreatments. When used to dye cotton or rayon fabrics containing other fibers, it imparts no stain to acetate, polyester fiber, or acrylic fiber. It stains nylon only slightly, wool noticeably, and shows considerable staining of silk.

E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Do you want more data? Write supplier or use card on page 151; list G-124

A wool mothproofing agent, known as Duron DF, can be used at mill level in an economical process to mothproof wool fibers permanently. Woolens so treated withstand drycleaning, wet cleaning, and all wear or handling.

Duron Corp., Bedford, Ohio.

Do you want more data? Write supplier or use card on page 151; list G-125

A blue dye for acetate, triacetate, and polyester fibers is highly dispersed and offers good color fastness and resistance to atmospheric and light fading. Known as Eastman Fast Blue B-GLF, the dye also provides excellent resistance to washing, perspiration, hot pressing, urea formaldehyde resins, drycleaning, and sublimation.

Eastman Chemical Products, Inc., 200 Madison Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-126

A gray vat dye for package and beam dyeing cotton and rayon gives level dyeing results of pastel shades, has a low initial striking rate, and good light and wash fastness properties. Named Tinon Grey 2 GR-F Paste, the homogeneous dye gives good exhaustion and dispersibility.

Geigy Dyestuffs div., Geigy Chemical Corp., Ardsley, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-127

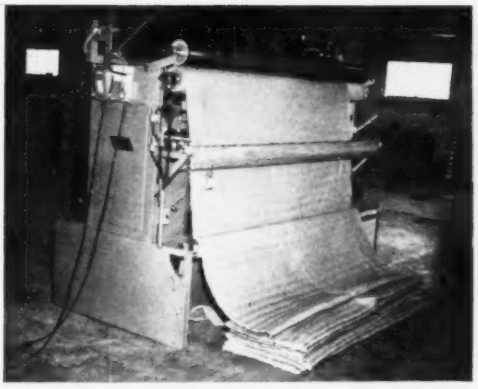
New yarns and fibers

A twist-set nylon carpet yarn that gives extra coverage to tufted carpets imparts a textured surface previously obtained in frieze twist wool carpeting. Sold under the trade name Uspun, the yarn has both the twist and the texture locked in the setting process and is provided in a variety of twists.

U. S. Rubber Co., Textile Div., Rockefeller Center, New York 22, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-128

Twenty-two-denier nylon staple fiber specifically designed for floor coverings imparts added crush recovery characteristics to various types of carpeting. Also recom-



SEE THE FOOLPROOF NEMO AUTOMATIC CUTTING MACHINE IN ACTION IN YOUR OWN OFFICE!!

You have to see it to believe it!

So . . . we arranged to get a movie of this amazing machine and a special action viewer, that we'll be glad to send you. Just turn the crank and see the cutter in action. Then, if you're interested we can talk about it.

The movie and viewer are available on loan on a first-come-first-served basis. Write for yours today . . . no obligation.

It handles nearly any material — from print cloth through tufted rugs or carpet.

It trims selvages and slits to any width desired; cuts any length from 8" to 10' or more — **no gears to change!**

Cut length is determined by length of chain hanging loose on a sprocket. For a different length of cut — hang on the desired chain.

NEMO INDUSTRIES

3081 Maple Drive, N.E., Atlanta 5, Ga., CE 7-1947

mended for adding hand and coverage, it is particularly advantageous when blended with other fibers, especially with wool.

Industrial Rayon Corp., 500 Fifth Ave., New York 36, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-129

Seventy-five-denier Arnel triacetate yarn is available in a 40-denier form. The yarn, predominantly for women's apparel, is recommended for its soft hand.

Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-130

New wool-like fiber. Carbon wool is elemental amorphous carbon in fiber form, available in various diameters and in both activated and unactivated forms. Some possible textile industry uses for the fiber are: adsorptive cloth, electrically conductive cloth, filter media for high temperature or corrosive conditions, protective clothing, and static elimination fabrics.

Barnebey-Cheney Co., Cassady at Eighth, Columbus 19, Ohio.

Do you want more data? Write supplier or use card on page 151; list G-131

A new type nylon tire and industrial yarn has been announced. Known as the RHB type, it offers greater strength, higher thermal resistance, and better adhesion values than tire yarns currently available. To the industrial yarn field, the new 840 denier, 160 filament yarn brings much greater resistance to sunlight or ultraviolet ray degradation. This is important to laminated and coated fabrics because of such end uses as outdoor furniture upholstery, garden umbrellas, boat tops and covers, automotive cover and canopies. It is also important in the webbing and cordage fields.

The Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-132

Yarns provide permanent protection from bacteria. An exclusive license to incorporate Permachem, an antibacteria chemical, in certain of its acetate, Arnel triacetate, and rayon yarns during their manufacture has been granted to Celanese Corp. The chemical inhibits the growth of common bacteria and mildew, mold, and odors originating from bacteria.

Celanese Corp. of America, 180 Madison Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-133

New gears improve roving frame operation

More efficient operation of Whitin 12" x 6½" roving frames is the result when an improved combination of top cone bevel gear and skip gear is utilized. The new gears provide greater acceleration at the change of the stroke to insure precise deposit of the roving layers and more accurate control of tension at the change.

The replacement gears consist of a 25-tooth top cone bevel gear and a 20-tooth skip gear, both being made of hardened steel to insure long life.

Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write or use card on page 151; list G-134

Strobe camera proves elliptical traveler floats free on
"Anti-Wedge"
DIAMOND FINISH RINGS
At highest speeds, will not dip, cannot trap or wedge yarn.
Patent Pending

WHITINSVILLE (MASS.)
SPINNING RING CO.
DIAMOND FINISH
Makers of Spinning and Twister Rings since 1873
Rep. for the Carolinas & Va.: W. K. SHIRLEY, P.O. Box 406, Belmont, N. C.
For Ala., Ga., & Tenn.: P. C. EVERETT, 369 Meadowbrook Dr. NE, Atlanta

Steam-Detergent Hurriclean Gun Speeds Mill-Wide Cleaning

Weighs only 6 1/4 lbs., yet the amazing new Oakite "Hurriclean" steam-detergent gun is a match for your toughest cleaning jobs. It's safe — steam travels in insulated inner tube, cool detergent solution in outer tube. And easy to operate! A mere twist of the rubber grip changes direction of spray.

Use the "Hurriclean" gun throughout the mill — for cleaning looms, spinning machines, slasher drums, tenter chains ... for walls, floors, ceilings ... for paint-stripping. Ask your local Oakite representative about it, or write to Oakite Products, Inc., 26C Rector Street, New York 6, N. Y.

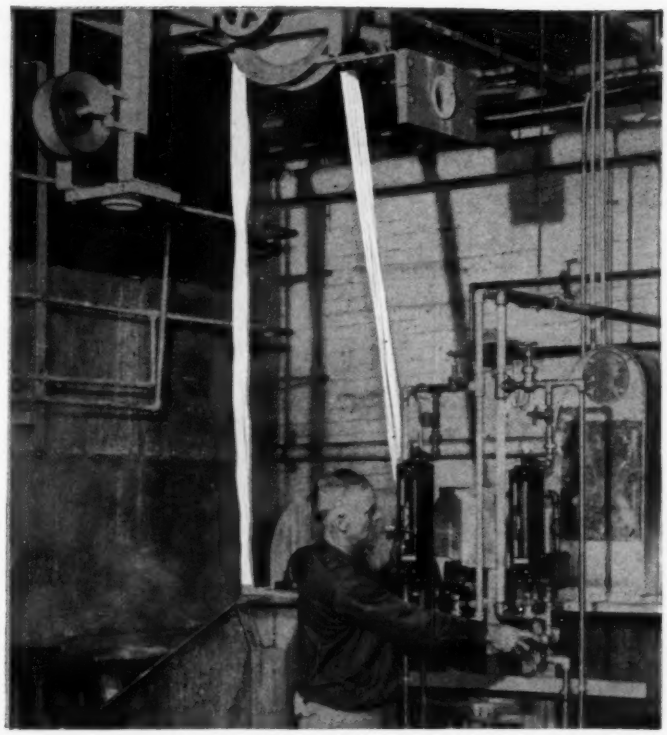
SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS · METHODS · SERVICE
SCIENCE

Export Division Cable Address: Oakite

Technical Service Representatives in Principal Cities of U. S. and Canada

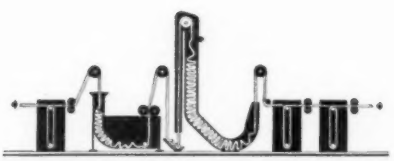
Joanna Western Mills

replaces kier process with Du Pont SOLO-MATIC peroxide bleaching process



• Flow of hydrogen peroxide is adjusted in Joanna's new Solo-Matic bleaching unit. Full production was maintained during change-over from caustic-chlorine batch process.

...saves 75% floor space—cuts time and production costs 27%



Du Pont's Solo-Matic process—the most advanced single-stage hydrogen peroxide bleaching process available.

"Located in a busy Chicago industrial area, we were faced with a serious lack of space," reports Joanna Western Mills. "Our bleaching operation was built around an outdated, space- and time-consuming caustic-chlorine batch process. Then a Du Pont representative showed us how the Solo-Matic peroxide bleaching process could save time and valuable floor space while improving product quality. What's more, his practical approach helped us maintain full production during the change-over!"

Du Pont's Solo-Matic peroxide bleaching process can offer *you* similar space-saving advantages with additional savings in steam and water. Or if you want to increase production, the Solo-Matic process can help you *double* production in the same floor space, using either existing or new equipment. In any case, you get the added advantage of improved brightness, uniformity and fullness in your product. If you plan to install a new bleaching operation . . . or alter your present setup . . . it will pay you to contact your Du Pont representative or write us at the address below for the complete "Solo-Matic" story.

DU PONT ALBONE®
hydrogen peroxide

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

ELECTROCHEMICALS DEPARTMENT
Peroxygen Products Division

E.I. DU PONT DE NEMOURS & CO. (INC.)
Wilmington 98, Delaware

For further information use Handy Return Card, Page 151

Equipment briefs

The "split personality" counter can be used as a plain, high-speed, quick-reset revolution counter with or without the predetermining feature which permits the unit to be set to knock off at any number within its 100,000 range. Instant resetting to zero is a matter of depressing the reset lever through a 60-degree arc even while the machine is running. If desired, the Series 1522 counter will subtract in the opposite direction. Speeds up to 6000 rpm of the drive shaft and 8000 counts per minute are the maximums recommended.

Veeder-Root, Inc., Hartford 2, Conn.

Do you want more data? Write supplier or use card on page 151; list G-135

A precision automatic net weighing machine is designed for extreme accuracies suitable for weighings of only a few grams and upward. When combined with a synchronous motor-driven dump timer, it provides the advantages of continuous weighing for blending and proportioning additives to a main bulk flow of materials. Designated as Model 4601NW, this weigher delivers accuracies of 1/10 gram on quantities below 10 grams, and 1% accuracy has been achieved on certain products.

The Exact Weight Scale Co., 538 East Town St., Columbus 15, Ohio.

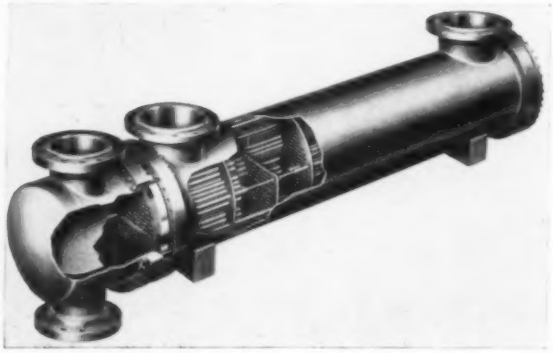
Do you want more data? Write supplier or use card on page 151; list G-136

Dry-type power centers are available in 5- and 2.5-kv classes for high voltage, and 600, 480, 240, and 120 volts on the low sides. Three-phase power ratings are from 45 to 300 kva. The Type DT-3 uses an air-insulated three-phase load-break switch with or without fuses. Either top or bottom entrance is possible. The dry-type transformer uses group III insulation for 150 C rise.

Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa.

Do you want more data? Write supplier or use card on page 151; list G-137

Heat exchangers that are adaptable as heaters, coolers, vaporizers, or condensers can be built to handle any combination of liquids or gases. Featuring a floating head and removable bundle, the C-100 exchangers are available in

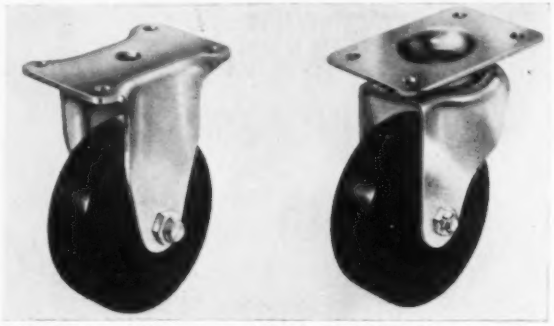


one, two, and four-pass designs. Pre-engineered and fully standardized, they can be readily assembled without incurring the costs and delays inherent in custom fabrications.

American-Standard, Ross Heat Exchanger Div., Box 2081, Buffalo 5, N. Y.

Do you want more data? Write supplier or use card on page 151; list G-138

On the "kingpinless caster" a single ball raceway performs the dual function of pin and bearing by joining the top plate to the yoke and by taking the thrust. Called the



3100 Series, with a capacity of up to 500 lb per caster, the units distribute the load over the entire bearing race to reduce wear. The casters are recommended for general use and are available in six models to accommodate six different wheel sizes ranging from 2¼" to 6" in diameter.

Rapids-Standard Co., Inc., 342 Rapistan Bldg., Grand Rapids, Mich.

Do you want more data? Write supplier or use card on page 151; list G-139

A dry bearing material that uses polytetrafluoroethylene (Teflon or Fluon), spherical bronze, and lead, has a compressive strength up to 23 tons psi—wear resistance of Du is from 10 to 100 times that of other self-lubricated bearings. It has low thermal expansion, high thermal conductivity, and a wide operating temperature range (from -328 F to 536 F). Developed by Glacier Metal Co., Ltd., England.

U. S. Gasket Co., Plastics Div. of Garlock Packing Co., Special Products Dept., Camden 1, N. J.

Do you want more data? Write supplier or use card on page 151; list G-140

A high velocity electronic dust precipitator is offered in a design which operates at face velocities of up to 600 fpm. High efficiencies are maintained while a 50% reduction in cubic requirements has been attained. The Electrocell unit has an attainable collection efficiency up to 97%.

American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky.

Do you want more data? Write supplier or use card on page 151; list G-141

A monorail system for textile plants is interchangeable with other monorails for additions or expansions. Called the Twin City Monorail, it is available in trussed and/or girded rail and with a complete selection of tongue, glide, and rotary switches. Cranes in the lighter line to two tons capacity, and in a heavier rail to ten tons capacity, are included in the system, with hand propulsion or electric fluid drive. Auxiliary equipment includes grabs, scales, lift sections, dipping machines, special buckets, racks, fire door openers, and special switches. Spans up to 40 feet are made by capping the rail with adequate sections.

Vern G. Ellen Co., Inc., 2123 Broadway St., N.E., Minneapolis, Minn.

Do you want more data? Write supplier or use card on page 151; list G-142

Two-hundred-pound bronze gate valves have expanded-type chromium steel alloy body seat rings that cannot loosen in service, wear-resistant wedge disks that are easily replaced, and cylindrical bodies that provide considerably greater resistance to line distortion and internal pressure. The valves are offered in both the rising stem and non-rising stem patterns in sizes from ½" through 3".

Crane Co., 836 Michigan Ave., Chicago 5, Ill.

Do you want more data? Write supplier or use card on page 151; list G-143

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7-1 SINGEING AND BRUSHING EQUIPMENT. Booklet shows pictures, gives short description of several automatic singeing and brushing machines. Industrial Heat Engineering Co., 121 Cleveland St., Greenville, S. C.

7-2 HYDRAULICS OF TEXTILES. Booklet tells how hydraulics can mean lower operating costs, greater production, better quality and less maintenance for textile machinery. Vickers, Inc., 1400 Oakman Blvd., Detroit 32, Mich.

7-3 ECLIPSE STARCHES FOR TEXTILES. Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

7-4 LIGHTING CATALOG. Helpful data and suggestions on plant lighting to assure adequate, profitable operation. How it can help uncover hidden operating costs—and profits. Sylvania Electric Products, Inc., Dept. 200, Lighting Div., Fixtures, One 48th St., Wheeling, W. Va.

7-5 SHAFT MOUNTED GEAR REDUCERS. Catalog gives specifications and tables on shock loads, Dimensions, recommended sheaves and belts and variable speed drives. Lovejoy Flexible Coupling Co., 4945-4999 West Lake St., Chicago 44, Illinois.

7-6 2000 LB. CAPACITY FORK TRUCK. Describes operating characteristics and construction features of 2000 lb. capacity gas-powered fork truck. Illustrated with photos and drawings. Clark Equipment Co., Battle Creek, Mich.

7-7 PIN DRAFTERS. Textile job report No. 21 tells how Warner & Swasey Pin Drafters help modify jute system for carpet yarns at Lehigh Spinning Co., Allentown, Pa.

7-8 "THICK AND THIN" RAYON. Data sheets present characteristics, uses and processing conditions for "Thick and Thin" rayon numbers 27, 7-77, 60, 7. Also contains sheets on filament rayon yarns. E. I. du Pont de Nemours and Co., Inc., Wilmington, Del.

7-9 HUMIDIFICATION BY GRADUVAC. Bulletin gives details on gravity type atomizer control system and tells how supply of water to atomizers is automatically regulatd. Parks-Cramer Co., Fitchburg, Mass.

7-10 LUBRICANT PUMPS. Catalog features new line of air-motor operated lubricant pumps. Covers design and engineering features, lubricant-output-performance and selection charts. Catalog No. 65, Lincoln Engineering Co., 5702-15 Natural Bridge Ave., St. Louis 20, Missouri.

7-11 WATER POLLUTION. Booklet describes laboratory and pilot plant facilities for the study of industrial water pollution, sewage treatment, water supply and air pollution problems. Can be transported for on-the-spot studies. Roy F. Weston, Inc., 4 St. Albans Ave., Newtown Square, Pa.

7-12 ANTI-STATIC AGENT. Data sheet lists basic characteristics of liquid anti-static agent which eliminates processing difficulties with fibers due to static electricity. E. F. Houghton, 303 West Lehigh Ave., Philadelphia 33, Pa.

7-13 MAGNETIC IDEAS. Describes the many and varied applications of permanent, non-electric magnetism in modern materials handling and magnetic separation equipment. W. R. Perry, Adv. Mgr., American Standard, Ross Heat Exchanger Div., Box 2081, Buffalo 5, N. Y.

7-14 MATERIALS HANDLING EQUIPMENT. Describes and shows photos of Battery Filler Truck, Slotted Bottom Trucks, Quill Cans, Conditioning Trucks, Work Benches, Lap Trucks, Doff Trucks and Loose Boxes. J. C. Paddock Co., Spartanburg, S. C.

7-15 OVERHEAD CONVEYOR. Catalog features "Cable-Way" Overhead Conveyor which has low-cost, ease of installation, quiet operation and long life. Conveyor Division, The American MonoRail Co., Fourth and Franklin Sts., Tipp City, Ohio.

7-16 SWITCH IDEAS. "How Others Do It" is publication containing ideas submitted by plant engineers and electricians showing how they've used snap-action switches to increase production efficiency. Micro Switch, Div. of Minneapolis-Honeywell Regulator, Freeport, Ill.

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R-1 Lummus Pepper-Shaker Opener —Gives complete details and photographs Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-2 Static Elimination — How to eliminate static safely and inexpensively. Simco Co., 920 Walnut St., Lansdale, Pa.

R-3 Card Grinding Information — Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

R-4 Card Clothing — Describes Strip-O-Matic Card Clothing. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia, Pa.

R-5 Versa-Matic Drawing Frame — Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

R-6 Sargent Opener—Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-7 Ball Bearing Comb Boxes — Describes working principle, shows cut-away Views, Southern States Equipment Corp., Hampton, Georgia.

R-8 Feathertouch Drafting — Describes "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

R-9 Automatic Weighing Feeders — Tandem Weighing Feeder produces webs, mats and felts of continuing accuracy. W. D. Dodenhoff Co., Inc., Box 178, Greenville, S. C.

R-11 Flexidyne Individual Card Drive—Describes operating principles, includes prices. Dodge Mfg. Co., Mishawaka, Indiana.

R-12 Bobbins — Catalog describes metal, wood and plastic bobbins. Illustrations show actual use. Lestershire Spool Div., National Vulcanized Fiber Co., Johnson City, N. Y.

R-13 Tips On Carding Procedure — Very helpful monthly bulletin concerns card operation and care. Ashworth Brothers, Fall River, Mass.

R-14 Pneumastop For Fly Frames—Brochure shows type of installation and method of operation. Pneumafil Corp., Charlotte 8, N. C.

R-15 Advantages of Aldrich Pickers —Good technical text, comprehensive pictures. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-16 Universal Card Coiler—Gives 12 reasons why it's "the best," includes dimensions. McDonough Power Equipment, Inc., McDonough, Ga.

R-17 New Condenser Tape — Describes Supr-O-Tape an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-18 Coilers and Conversions — Describes new complete coilers and conversions for cards. Southern States Equipment Corp., Hampton, Ga.

R-19 84" Woolen Card — Includes picture, floor plan, description, and technical details. Davis & Furber Machine Co., North Andover, Mass.

R-20 SRRL Opener—Cleaner—Information on new SRRL development for opening and cleaning cotton being manufactured for sale to mills by Davidson-Kennedy Co., 1090 Jefferson St., N. W., Atlanta, Ga.

SPINNING—TWISTING—WINDING—SPOOLING—WARPING—THROWING

R-101 Spinning News — Up-to-the minute news on spinning equipment. Roberts Co., Sanford, N. C.

R-103 Products For Spinning and Weaving—Complete line, applications, advantages shown. Dayton Rubber Co., Textile Div., Dayton, Ohio.

R-104 New Bobbin Manual — Only complete, authoritative bobbin guide in the industry. Write direct to Dept. DD, Lestershire Spool Division, National Vulcanized Fibre Co., Wilmington 99, Delaware.

R-105 Spindle Oil — "Gulfspin" insures against excessive wear and eliminates spindle wobble. Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa.

R-108 High Speed Automatic Quiller —Lists advantages and dimensions of "Autocopser." Terrell Machine Co., Inc., P. O. Box 928, Charlotte, N. C.

R-110 Stop Frame On Roving Failure—Adamstop instantly detects roving failures, stops frame. Adams, Inc., 209 East Stone Ave., Greenville, S. C.

R-111 Automatic Cop Winder—Tells how high production with less labor is possible. F. A. Lazenby Co. 3106 Elm Ave., Baltimore 11, Md.

R-112 Bahnson Packaged Modernization—Details on Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. Bahnson Company, Winston-Salem, N. C.

R-113 Sectional Warper — Describes full width and sectional warpers for knitting, weaving. Robert Reiner, Inc., Weehawken, New Jersey.

R-114 Conical Rings and Flyers — Complete details and specifications. Herr Manufacturing Co., Inc., 318 Franklin St., Buffalo 2, New York.

R-115 Precise Winding Machine — For winding pineapple or straight cones and tubes of synthetics. Foster Machine Co., Westfield, Mass.

R-116 Automatic Cleaning Equipment—Working details and advantages of the Tri-Rail Cleaner. American Monorail Co., 13107 Athens Ave., Cleveland 7, Ohio.

R-117 Aluminum Section Beams — Lists advantages, includes prices and delivery schedules. Hayes Industries, Inc., Jackson, Mich.

R-118 Lubricants For Textiles — Samples of Ben Boy Bearing, Spindle, Twister Lubricants and Non-Melting Oils. Georgia-Carolina Oil Co., Box 101, Macon, Ga.

R-119 Custom Made Thread Guides—Includes composition, properties, specifications of all designs. American Lava Corporation Chattanooga 5, Tenn.

R-120 Spinning Frame Conversions—Big-package, new-frame results at half the cost. Meadows Mfg. Co., Station A., Atlanta, Ga.

R-121 Collecto-Vac — New development collects lint, fly and broken ends. The Bahnson Company, Winston-Salem, N. C.

R-122 Static Eliminator For Warpers-Slashers-Creels—Increased production, improved quality, reduced waste. The Portland Co., 22 Fore St., Portland, Maine.

R-123 Spinning and Twister Rings — Complete details, pictures, price lists. Whitinsville Spinning Ring Co., Whitinsville, Mass.

R-125 Lint-Free Creel—Complete details and pictures of the new Airfoil Design. Pneumafil Corporation, Charlotte 8, N. C.

R-126 Gear Bulletins — Cover products and gears for the complete textile mill. Precision Gear & Machine Co., 2001 N. Tryon St., Charlotte 2, N. C.

R-128 Suction Cleaning System—Details on new Collector Unit Model C-4. Pneumafil Corp., Charlotte 8, N. C.

R-129 Facts About Your Flyers and Spindles—Advantages of smooth flyer and spindle operation. Ideal Machine Shops Bessemer City, N. C.

R-132 Traveling Cleaners—Describes improved frame and room cleaners. Parks-Cramer Co., Fitchburg, Mass.

R-133 Lapless Endless Spinner—Full information available. Ton Tex Corporation, 31 Columbus Ave., Englewood, N. J.

R-135 Worsted Spinning — Describes five stages from top to yarn. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

R-139 Spindle Oiling Machine—Features and advantages noted. Wicaco Machine Corp., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

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R-145 Roller Bearing Spindles — Pictured in cut-away views, advantages described. The Marquette Metal Products Co., 1145 Glenwood Ave., Cleveland, Ohio.

R-146 Cone Winder—Describes Model 102 winder, including applications. Foster Machine Co., Westfield, Mass.

R-147 Short Cut To Staple Fiber Spinning—Ten steps in operation of the Tow Stapler. Turbo Machine Co., Lansdale, Pa.

R-148 Weaver's Knotter — Instructions as to use, description. A. B. Carter, Inc., Gastonia, N. C.

R-149 Textile Roll Coverings — Describes complete line as well as other mill supplies. Armstrong Cork Co., Industrial Div., Lancaster, Pa.

R-150 Lint-Free Motor — Describes motor for constant speed a-c driven pickers, roving frames, spinning and twisting frames, etc. Westinghouse Electric Corp., P. O. Box 2278, Pittsburgh 30, Pa.

R-151 Tape For Driving Spindles — Describes banding for spindle drives on twisting, roving and spinning. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

R-152 Giant Aluminum Cotton Beams —Describes 38 x 54" section beams for cotton. Hayes Industries, Inc., Jackson, Mich.

R-153 Woolen Spinning Frame — Colored picture, complete details Davis & Furber Machine Co., North Andover, Mass.

R-154 Large Package Twister—Information on new anti-friction Jumbo Twister which carries a 14" bobbin with a 12" build. Meadows Mfg. Co., P. O. Box 4354, Atlanta, Ga.

R-155 Wide Setover Pin Drafter — Booklet describes advantages, technical aspects, adaptments of wide setover Pin Drafter. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

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R-203 Loom Supplies — Describes complete line. E. H. Jacobs Northern Division, The Bullard Clark Co., Danielson, Conn.

R-204 Innovation In Textile Drying—Details on Steam or Gas "Hot Air" Slasher. J. O. Ross Engineering Corp., 444 Madison Ave., New York 22, New York.

R-206 Loom Production Charts — Celluloid card shows yards per loom per week. Ralph E. Loper Co., Greenville, S. C.

R-207 Aluminum Beams—Describes lightweight beams for textiles, Hayes Industries, Inc., Jackson, Mich.

R-208 The Story Of Starches — History and information on manufacture and use of starches. National Starch Products, Inc., 750 Third Ave., New York 17, N. Y.

R-209 Loading System — Pneumatic loading system for Saco-Lowell slasher. The Foxboro Company, Foxboro, Mass.

R-211 Steel Warp Beams—Beams for both broadloom and narrow fabrics. Milton Machine Works, Inc., Milton, Pa.

R-212 Penford Gums In Textiles — Describes excellent properties for warp sizing spun yarns. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

R-213 Saco-Lowell Positrol Slasher—Includes advantages, photographs, cutaway drawings. Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

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R-218 Loom Reed Booklet — Describes in detail a variety of reeds. Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

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R-220 Chemical Data Sheets—Available on a full range of chemicals. Nopco Chemical Co., Harrison, N. J.

R-223 Tufting Machines — Describes automatic pattern attachment. Cobble Bros. Machinery Co., Inc., River Road, Chattanooga, Tenn.

R-226 Prevent Fabric Distortion — How to eliminate distortion and where to check for it. Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

R-227 Formulas For Slashing Arnel —Includes also information on warping, weaving and quilling. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte 1, N. C.

R-228 The Random Web Process — Describes the Rando-Webber and Rando-Feeder. Bulletin 105. Curlator Corp., Textile Div., 501 W. Commercial St., Rochester, N. Y.

R-232 Hydraulic Slasher Drives — Bulletin 5571 describes economical approach to improved slasher operation. Vickers, Inc., 1036 Peachtree St., Atlanta, Ga.

R-233 Textile Accessories — Gives specifications of Gates textile accessories in handy pocket booklet. The Gates Rubber Co., 1001 Broadway, Denver 17, Colorado.

R-234 Cocker Slashers — Complete specifications and advantages, including allied equipment. Cocker Machine & Foundry Co., Gastonia, N. C.

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R-236 Unifil Loom Winder — Describes new concept of filling preparation which needs no quilling area. Universal Winding Co., P. O. Box 1605, Providence, R. I.

R-237 High Speed Warp Sizer—Gives outstanding features and specifications. Cocker Machine & Foundry Co., Gastonia, N. C.

R-238 Traveling Loom Cleaner—Advantages of the new Oscillaire loom cleaner. Parks-Cramer Co., Fitchburg, Mass.

R-239 Draper Repair Parts Catalog —Contains illustrations covering all mechanisms and construction with complete listings. Draper Corporation, Hopedale, Mass.

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R-241 Textile Machinery Parts Catalog — Describes complete line of Dayco and Thorobred textile parts. Dayton Rubber Co., Dayton, Ohio.

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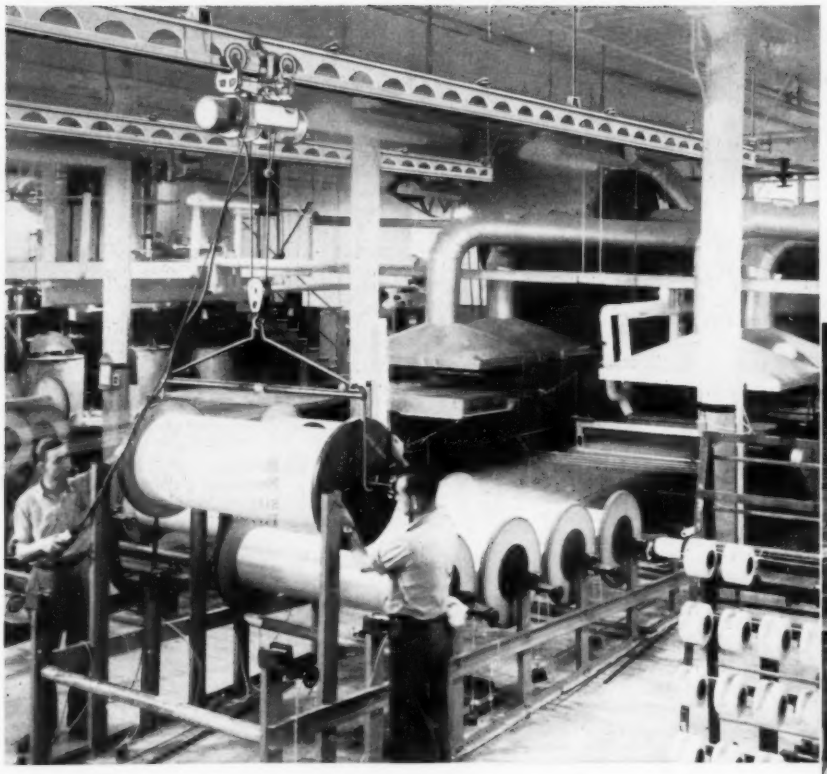

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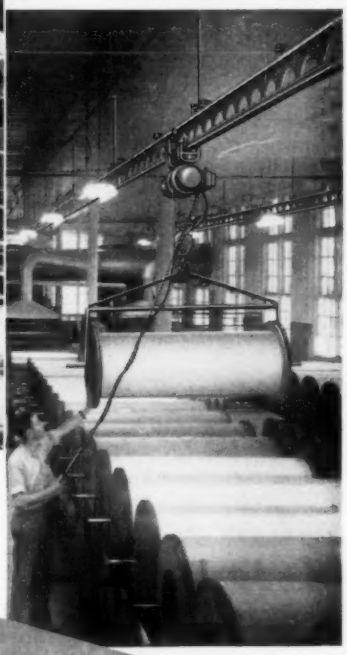
Beams are easily handled in and out of the warp beam storage. The four double-deck racks accommodate a total of 176 beams.



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R-242 Instruments For Accuracy. — Systems for sizing and slashing. Bulletin 98229, Taylor Instrument Co., Rochester, N. Y.

R-243 Counting Devices — Describes complete line of counters for every application. Trumeter Company, 1265 Broadway, New York 1, New York.

R-244 Squirrel-Cage Loom Motor — Describes totally enclosed, non-ventilated, constant-speed motors. Westinghouse Electric Co., P. O. Box 2278, Pittsburgh 30, Pa.

R-245 Static Bars — Humorously illustrates how static can be overcome. The Simco Co., 920 Walnut St., Lansdale, Pa.

R-246 Care Of Draper Shuttles — Describes how longer, troublefree service may be obtained. Draper Corporation, Hopedale, Mass.

R-247 Clutch Brake Motor For Draper Looms — Describes compact power package for driving Draper looms. Westinghouse Electric Corp., P. O. Box 2278, Pittsburgh 30, Pa.

R-250 Bulk Handling of Starch—Bulletin surveys advantages and disadvantages of a bulk system for starch. It describes the types of equipment available for each component and gives estimates of costs. A. E. Staley Mfg. Co., Box 151, Decatur, Ill.

R-251 Small Pilot Slasher — Information on new all-electric Callaway Slasher. Ideal for mills which must prepare a lot of samples. West Point Foundry & Machine Co., West Point, Georgia.

R-252 Weaving Machines — Textile job report No. 20 on Warner & Swasey Sulzer weaving machines at Yale Woolen Mills. Warner & Swasey, 5701 Carnegie Ave., Cleveland 3, Ohio.

R-253 One-Piece Sizing Agent — Houghto-Size CW provides low kettle cost, results in free-running warp of high breaking strength, increasing weaving efficiency. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

R-254 Lubricant for Synthetics — Booklet illustrates Fibregard, a colloidal lubricant that adheres uniformly and continuously to the surfaces of man-made fibers. Harry Miller Corp., 4th and Bristol Sts., Philadelphia 40, Pa.

KNITTING

R-301 Singlehead Full-Fashioned Machine — Literature on request from the Wildman Jacquard Mfg. Co., Full Fashioned Div., Norristown, Pa.

R-302 Forged Head Aluminum Beams — Gives specifications on new high yardage beams. Milton Machine Works, Inc., Milton, Pa.

R-303 Raschel Knitter — Describes new Raschel-type knitting machine. Kidde Manufacturing Co., Inc., 35 Farrand St., Bloomfield, N. J.

R-304 Vibralon For Hosiery—Greater snag resistance, dullness, warmth and absorbency. W. F. Fancourt Co., 519 S. Delaware Ave., Philadelphia 47, Pa.

R-306 Booklets On Fidelity Machines — Details on "400", Multi-Design Ribber, Skein Reelers. Fidelity Machine Co., 3908-18 Frankford Ave., Philadelphia 24, Pa.

R-307 Needle Oil Does Not Stain — Details on "Gulftex 39" developed for knitting mills. Gulf Oil Corp., P. O. Box 1106, Pittsburgh 30, Pa.

DYEING—BLEACHING—FINISHING—PRINTING

R-401 Solvent Detergents — Capabilities and advantages noted. Oakite Products, Inc., 126C Rector St., New York, N. Y.

R-402 Tubes For Package Dyeing — Describes Dytex tubes for one-time use. Sonoco Products Co., Hartsville, S. C.

R-403 Finishing Machinery — Text and photographs of complete line of machinery. Marshall and Williams Corp., 46 Baker St., Providence, R. I.

R-404 Water Analysis — Includes tables, conversion factors, indicators, standard solutions. Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

R-406 Urea, Formaldehyde.—Literature on urea, formaldehyde or U.F. concentrate-85. Dept. CUFI-29-1, Nitrogen Div., Allied Chemical and Dye Corp., 40 Rector St., New York 6, New York.

R-407 Acid Mordant Blue B—Details on Acid Alizarine Blue B for bright navy shades. Zinsser & Co., Inc., Hastings on Hudson 6, New York.

R-408 Hydrogen Peroxide — Covers properties, uses and handling. Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

R-412 Cationic Surface Active Agent — Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

R-413 Chemicals, Dyes And Intermediates — Complete file of bulletins available. Metro-Atlantic, Inc., Centredale, R. I.

R-414 Wetting Agent — Describes highly concentrated detergent and wetting agent. Rohm & Haas Co., Washington Square, Philadelphia, Pa.

R-415 Peroxide Bleaching System — Illustrates and describes this continuous system. E. I. du Pont de Nemours & Co., Electrochemical Dept. T.I-2, Wilmington, Del.

R-416 Surface Tension Depressant — Tells how product can be used for wetting, dye leveling or as a penetrant. Hart Products Corp., 1440 Broadway, New York, N. Y.

R-417 Textile Chemicals — Describes leading products for wet processers. Royce Chemical Co., Carlton Hill, N. J.

R-418 Industrial Water Treatment — Discusses fundamentals of industrial water treatment. Rohm & Haas Co., Resinous Products Div., Washington Square, Philadelphia 5, Pa.

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R-420 Brine For Textile Industry — Describes Lixate Process for making brine. International Salt Co., Inc., Scranton, Pa.

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R-422 Catalyst AC-6 — Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Dept. T1-3, Springfield 2, Ohio.

R-423 Soda Ash Bulletin — Contains useful data covering this subject. Solvay Sales Division Allied Chemical & Dye Corp., 40 Rector St., New York 6, New York.

R-424 Water Repellent Finish — Describes Aquarol water repellent finish. Arkansas Co., Inc., Newark, N. J.

R-426 Industrial Oil — Catalogs on Industrial Oil and Fatty Acid products. Swift & Company, Industrial Oil Dept., 1800 165th St., Hammond, Indiana.

R-428 Chemical Catalog — Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

R-429 Chemical Bulletins — Issued each month as a help to wet processers. WICA Chemicals, Inc., P. O. Box 506, Charlotte, N. C.

R-430 Hydraulic Power Units — Describes unit for operating hydraulic textile machines. B. F. Perkins & Son, Inc., Holyoke, Mass.

R-431 Proctor Drying Machinery — Describes all types of dryers, includes information on preboarding. Proctor & Schwartz., Inc., 7th and Tabor Rd., Philadelphia, Pa.

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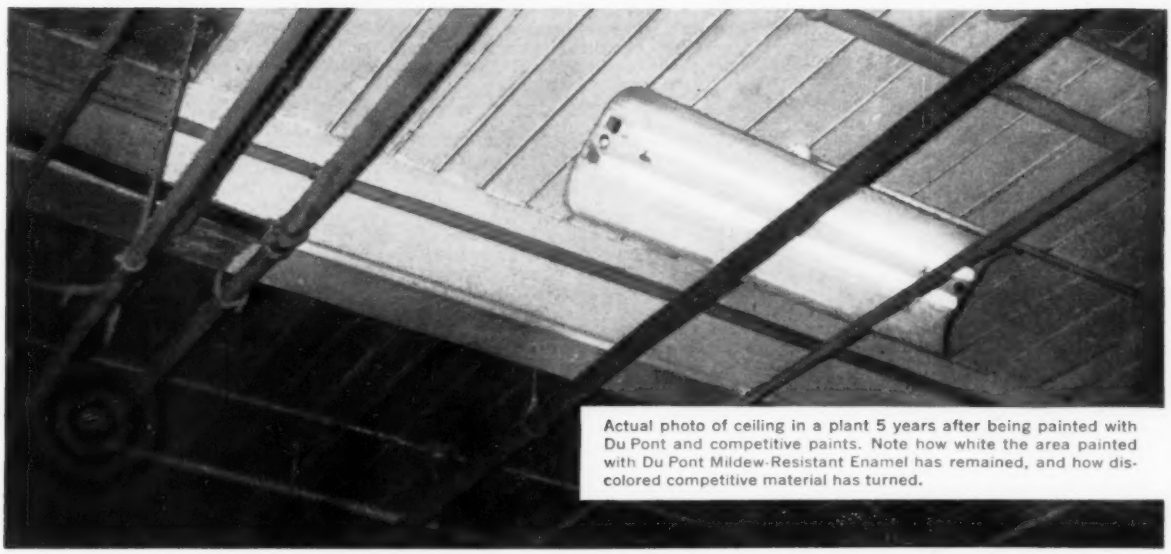

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R-434 Base Detergent Acids—Bulletin tells how new TENN-ACIDS offer simple and practical method for mills to prepare concentrated, low cloud point detergents based on alkyl aryl sulfonates. Tennessee Corp., Marketing Research & Development Dept., 1330 W. Peachtree St., Atlanta 9, Ga.

R-435 Cut Water Treatment Costs — Describes the control of scale, slime, algae and corrosion. Oakite Products, Inc., 126C Rector St., New York 6, New York.

R-436 Rapidase For De-Sizing — The properties and characteristics of Rapidase in detail. Wallerstein Co., Inc., 180 Madison Avenue, New York 16, N. Y.

R-437 Caustic Soda—Book describes the uses, manufacturing processes, unloading and dissolving diagrams, materials of construction, analytical processes, etc. Wyandotte Chemicals Corporation, Michigan Alkali Division, Wyandotte, Michigan.

R-438 Surface-Active Agent — Properties, applications, of Nonionic Actylphenoxyethanol Triton. Rohm & Haas Co., Special Products Dept., Washington Square, Philadelphia, Pa.

R-440 Guiders And Tension Devices — Straight line guiding of open width goods. Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

R-441 Processing Arnel Fabrics and Blends — Formulas for dyeing, printing, finishing and heat treating. Celanese Corp. of America, Textile Div., Marketing Dept., Box 1414, Charlotte, N. C.

R-442 Hycar Latices — Physical properties and typical fields of application. B. F. Goodrich Chemical Co.,

R-443 Sodium Hydrosulfite — Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

R-445 New Finishing Rolls — Money-saving facts about long-wearing, quality rolls. The Dayton Rubber Co., Holfast Div., 1486 Lakewood Ave., Atlanta, Ga.

R-446 Ethanolamines — Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical and Dye Corp., 40 Rector St., New York 6, New York.

R-447 Nappers For Treating Any Fabrics — Complete details on Muller Tri-Napping Machine. Franz Muller, Monchen-Gladbach, Germany.

R-448 Ball Bearing Turn Table — Describes 48-inch steel turn table for mills. Birch Brothers, Inc., 32 Kent St., Somerville, Mass.

R-449 Rotary Dyeing Machine—For use in dyeing hosiery, hats, gloves, socks, etc. Turbo Machine Co., Lansdale, Pa.

R-452 Micro Switch For Wet Process — Advantages and applications in dyeing, bleaching, finishing. Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill.

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R-455 Aligning Lays—Setting instructions for step-by-step aligning. Draper Corporation, Hopedale, Mass.

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R-457 Dyeing, Bleaching and Drying Equipment — Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

R-458 Napthol Ratios Slide Chart — Quickly and accurately enables operators to determine Napthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

R-459 "PCB" Rock Salt — Tells how product saves money, eliminates bad dyeing. Morton Salt Co., Industrial Division, 120 So. LaSalle St., Chicago 3, Ill.

R-461 Wool Oils—Describes influence of wool oils in producing suality yarns and fabrics. Proctor & Gamble Dist. Co., Gwynne Bldg., Cincinnati, Ohio

R-462 Bleaching With Peroxygen Chemicals — Bleaching methods comprehensively treated. Becco Chemical Div., Food Machinery & Chemical Corp., Station B, Buffalo 7, New York.

R-464 Automatic Control System For Continuous Bleaching — How to control temperature, pressure and liquid level. Taylor Instrument Companies, Rochester 1, New York.

R-466 Penford Finishing Gums — Complete data, including physical properties. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

R-467 Regeneration Of Zeolite Water Softeners — Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

R-468 Dyeing Synthetic Fibers—Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

R-469 Single Apron Stock Dryers — Presents latest idea in automatic drying. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-470 Eliminate Dye-Bath Shock — How to protect fabrics from crow's-feet, uneven shades. Foxboro Company, 487 Neponset Ave., Foxboro, Mass.

R-474 Industrial Brushes — Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

R-475 Waste Heat Recovery — Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

R-476 Washers For Scouring, Bleaching, Acidifying — Describes high-capacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-478 Wool Cleaning Unit—Describes unit for cleaning carpet wools mechanically before scouring. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

R-479 Naphthol for Lightfast Browns—Booklet describes new, straight, nonsubstantive naphthol, Naphthol AS-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

R-480 Softener, Lubricant, Napping Aid—Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

R-481 Handbook on Methocel—Gives technical information and use data on family of methylcellulose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

FIBERS AND YARNS

R-502 Fortisan-36, New Textile Fiber—Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

R-503 Caprolan Nylon Heavy Yarns—Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

(Continued Next Page)

Facts about COTRON*

COTRON fabrics offer these important selling advantages:

- Richer Lustre • Improved Light Fastness • Better Drape
- Whiter Goods • Brighter Colors • More Luxurious Hand
- Better Definition of Print Pattern • More Even Appearance

These are some of the many important advantages consumers everywhere are learning about COTRON, the new cotton-rayon blend. The American Viscose Corporation has embarked on a thorough promotion program that's bringing honest-to-goodness results —big 4-color double-spread national magazine ads, trade ads, complete department and specialty store promotions, window and in-store displays, dealer mat ads, statement inserts—*the whole works!*

Yes, people everywhere are getting to know about COTRON—and already they're asking for goods tagged with the COTRON tag.

Get your share of the ever-increasing demand for COTRON—investigate COTRON now!

In wash and wear, resinated COTRON compared to resinated all-cotton fabrics shows

- Greater strength after repeated laundering
- Marked improvement in strength retention after repeated laundering with chlorine bleach

The Technical & Textile Service Department of the American Viscose Corporation is pleased to make available to finishers everywhere its vast store of information, experience and know-how regarding COTRON. A competent technical representative is at hand at all times to assist finishers with their COTRON applications.

* a fabric of cotton and AVISCO® rayon

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R-506 Rayon—Mile By Mile—Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

R-507 The Chemstrand Nylon Story—Describes the birth and growth of Chemstrand nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

R-508 Color-Fast Fibers — Further information on "Coloray," Courtauld's solution dyed rayon staple which is a contribution to colorfastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

RESEARCH—TESTING—LABORATORY

R-601 Testing Instruments—Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearney, N. J.

R-602 Metal Detector — Spot troublemakers before they harm equipment or fabrics. Radio Corp. of America., Dept. S-271, Building 15-1, Camden, N. J.

R-603 Shadograph Weighing Devices—Pictures and information on various types of scales. Exact Weight Scales Co., Columbus 8, Ohio.

R-604 Evenness Tester—Details on taking the guess out of quality control. Uster Corp., 2516 Wilkinson Blvd., Charlotte, N. C.

R-606 Strobotac — Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

R-607 Yarn Count Scale—Data sheet tells how direct-reading instrument provides fast, accurate method of determining yarn count number. Exact Weight Scale Co., Columbus, Ohio.

MANAGEMENT, PROCESS ENGINEERING CONSULTANTS, FACTORS

R-701 Factoring Service—Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

R-702 Beechcrafts At Work — Tells how Beechcraft executive airplanes can save time and money. Southern Airways Co., Atlanta Airport, Atlanta, Ga.

R-705 The Wonalancet Way — Deals with current problems in Textiles. Wonalancet Company, 128 Burke St., Nashua, N. H.

R-706 A Fair Day's Pay And In Return A Fair Day's Work — Outlines proper utilization of labor, material and equipment. American Associated Consultants, Inc., 250 Park Ave., New York, N. Y.

Non-Woven Fabrics— Booklet gives outline of nature and history of non-wovens and the manufacturing techniques of today. Booklet 56-219A, Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

GENERAL PLANT OPERATION

R-801 Textile Brushes — Describes complete line of brushes for all departments of mill. S. A. Felton & Son Co., Manchester, N. H.

R-802 Belt Lacing Equipment — Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

R-804 "Motor Selector." — How to select a-c motors for specific application. Bulletin B-2103. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

R-805 Everything For Floor Care — Describes scrubbing, waxing, polishing and mopping equipment as well as waxes, sealers, and cleansers. Finnell System, Inc., Dept. TI, 1300 East St., Elkhart, Ind.

R-806 Rotary Pressure Joints—Details on self-lubricating, self-adjusting, self-aligning joints. The Johnson Corp., Three Rivers, Mich.

R-807 Servicing "One-Shot" Lubricators—Describes high capacity spring discharge piston pump lubricator. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-809 Wrap Up Lint Problems—Automatic lint filters remove lint from air, winds it into desposable roll. Bulletin 234, American Air Filter Co., 275 Central Ave., Louisville 8, Ky.

R-810 Stop Corrosion — Details on "Speed-Rex" paint for metal, wood and concrete. Truscon Laboratories, Box 69, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

R-812 Mechanical Power Transmission — Includes drawings, dimension, weights, prices, application. Dodge Mfg. Corp., Mishawaka, Indiana.

R-813 Metal Cleaner and Preserver—Describes Immunol, a neutral, nontoxic, non-flammable, odorless solvent that cleans, degreases and rustproofs metal. Harry Miller Corp., 4th and Bristol Sts., Philadelphia 40, Pa.

R-816 Leather Belting — Selection, installation, proper maintenance. Atlanta Belting Co., 508-510 Whitehall St., S. W., Atlanta, Ga.

R-817 One-Shot Lubricators—Details on pull-type semi-automatic lubricators. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-818 Story of Nylon Bristle. — Tells of discovery and production, with special attention to "Tynex," a form of Nylon ideal for use in brushes. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

R-820 Floaxial Dial Scales — Explains mechanism and gives applications. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

R-821 Modern Methods Of Textile Floor Maintenance — Complete details on taking care of mill floors. G. H. Tennant Co., 2530 N. Second St., Minneapolis 11, Minn.

R-822 Industrial Greases — Describes multi-purpose lithium soap industrial greases. Sinclair Refining Co., 600 Fifth Ave., New York, New York.

R-823 Roller Bearings For Textiles—How roller bearings are employed for more profitable textile production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

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R-829 Paint Stripping Booklet — Explains simplified method of stripping paint. Oakite Products, Inc., 22 Thames St., New York 6, New York.

R-830 Air Filtration — Illustrates Auto-Airmat, a dry-type air filter. American Air Filter Co., Inc., 275 Central Ave., Louisville 8, Ky.

R-832 Drinking Fountains & Coolers—Description of all models, dimensions, illustrations. Halsey W. Taylor Co., Warren, Ohio.

R-833 Textile Leathers Catalog — Characteristics and advantages of "Tannate" leathers. J. E. Rhoads & Sons, 2100 W. Eleventh St., Wilmington, Del.

R-834 Catalog Of Needle Bearings — Design, application for five types of needle bearings. The Torrington Co., Torrington, Conn.

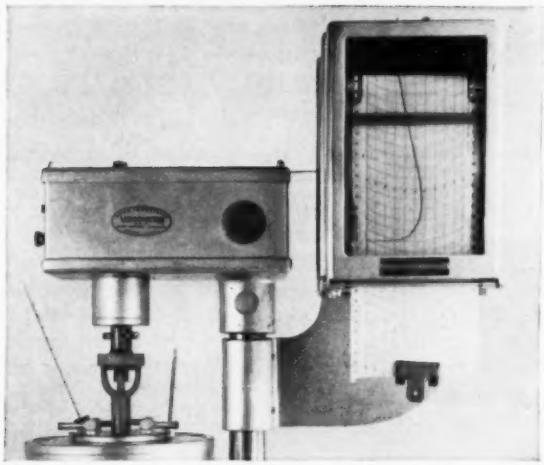
R-835 Textile Lubrication — Shows methods and means of lubricating all machinery. The Texas Co., 135 East 42nd St., New York 17, N. Y.

R-836 Metered Lubrication — Points up advantages of central lubrication systems. Bijur Lubricating Corp., Rochelle Park, N. J.

R-837 Service Procedure For Ball Bearings—Helpful manual shows how to increase life of ball bearings. New Departure Div., General Motors Corp., Bristol, Conn.

R-839 Lubrication Of Electric Motors—How to lubricate and clean ball and roller bearings. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

Quick Course in Starch and Dextrin Buying



1. How does it rate on stability? Viscosity stability is a major factor in warp sizing, particularly under high-temperature conditions—and is essential for uniform added weight. This characteristic can be accurately evaluated with a Corn Industries Research Foundation Viscometer.

There are nearly 1000 different corn starches and dextrins on the market. Each one does a job. How can you be sure you're choosing the right one? The correct choice depends on many factors. Here's what to look for—how to compare various characteristics—and

how to select the right starch or dextrin to do the job right!

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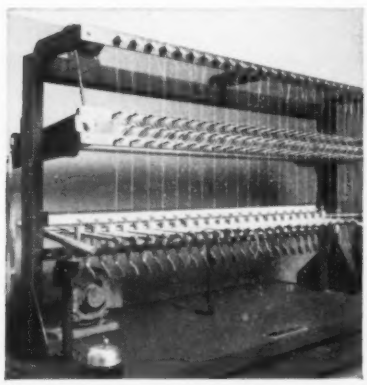
But whether you use these or other methods of testing, remember this: Staley's never-ending research and quality-control laboratories subject every type of starches, gums, dextrins to the most critical tests—not only the tests pictured here, but other demanding tests as well.

The result? A complete line of custom-made, uniform-quality products for sizing and finishing that meet your most exacting specifications.

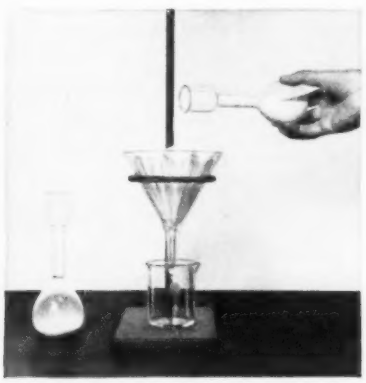
2. Is it the right viscosity? Proper size viscosity is important in almost every application and is a key factor in determining add-on for optimum weaving. The Scott Cup is one of the quickest, simplest, most efficient methods of checking viscosity.

3. What about tensile strength? Important too, is the effect of any treatment on the strength of yarns, fabrics. Tensile strength—ranging from delicate yarns to coarse, durable fabrics—may be determined with the "Instron" Tensile Tester.

6. How does it rate on color? Generally, dextrins should be of good whiteness when they are to be used in finishing. Precise determinations of color present in dextrins are possible with the "Hunter" Colorimeter, shown above.



4. How does it rate on abrasion resistance? The ability of a sized yarn to resist abrasion during the weaving operation must be carefully evaluated in choosing a starch. The "Walker" Abrader is widely used in this test.



5. Does it have the right solubility? Another important consideration in selecting the *right* dextrin is water solubility. This can be easily determined through a simple analytical procedure utilizing filtration and evaporation.

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R-840 Ball Bearings For Textile Machinery — Bearings for all phases of textile processing. The Fafnir Bearing Co., New Britain, Conn.

R-841 Lubrication Of Bearings — Helpful list of do's and don'ts to prolong bearing life. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

R-842 Textile Mill Cleaning Guide — Methods and means of proper cleaning and maintenance. Oakite Products, 52 Rector St., New York 6, New York.

R-843 For Static Elimination — Eliminates static safely, simply and inexpensively. Simco Co., 980 Walnut St. Lansdale, Pa.

R-845 Cut Costs With Moyno Pumps — Describes "progressing cavity" pumps for mercerizing and sizing. Bulletin 30-TI. Robbins & Myers, Inc., Springfield, Ohio.

R-847 Lubricants For Textiles — Working samples of bearing lubricants, spindle oils, etc. Georgia-Carolina Oil Co., Box 101, Macon, Ga.

R-849 Detect, Extinguish Fires. — Describes portable and built-in extinguishers; smoke detecting and rate-of-rise fire detecting systems. Catalogue "P-40", Dept. "A", Walter Kidde & Co., Inc., Main St., Belleville 9, N. J.

R-850 New Lubricated Plug Valves—Semi-steel and steel lubricated plug line. The William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

R-851 "Tank Talk"—Shows various types of elevated steel tanks. R. D. Cole Manufacturing Co., Newnan, Ga.

R-852 Cotton Mill Equipment — Traces pictorially the steps in processing raw cotton into finished cloth. Westinghouse Electric Corp., 511 Wood St., Pittsburgh 30, Pa.

R-853 Micro Switch Bulletin—Catalog of products includes prices, applications, etc. Micro Switch Div., Minneapolis-Honeywell Regulator Co. Freeport, Ill.

R-854 Roller Bearings For Textiles—How roller bearings can help production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

R-855 Unit Heater — Data on the Herman Nelson horizontal and vertical units. American Air Filter Co., Inc., 215 Central Ave., Louisville, Ky.

R-856 Stainless Steel For Textiles—Applications and advantages of stainless textile equipment. Allegheny-Ludlum Steel Corp., Dept. TI-93, Oliver Bldg., Pittsburgh 22, Pa.

R-857 Finnell Combination Scrubber-Vac—Illustrated literature gives complete specifications and describes various methods of combination-machine-scrubbing, including method recommended for cleaning oily floors.—Finnell System, Inc., 1300 East St., Elkhart, Indiana.

R-861 "Vari-Pitch" Sheave Bulletin —Control by means of pitch diameter adjustment described. Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

R-862 Prevent Corrosion of Plain Steel — Describes special C-17 Pre-Krete, a hydraulic cement formula, designed to prevent corrosion or rust of plain steel vessels. Pocono Fabricators, Inc., Div. of Patterson-Kelley Co., Inc., East Stroudsburg, Pr.

R-863 Penetrating Wood Finish — Describes floor seals for textiles. E. I. Du Pont De Nemours & Co., Inc., Finishes Div., Wilmington, Del.

R-864 Certified Climate Air-Changer System — Describes use with direct humidification for partial or complete air conditioning. Parks-Cramer Co., Fitchburg, Mass.

R-868 Ridge Tool Prices—Capacities and weights included along with pictures. Ridge Tool Co., Elyria, Ohio.

R-869 Stainless Steel Fabrication — Information on ventilating and drying, slasher exhaust, and materials handling in stainless. Sims Metal Works, West Point, Ga.

R-872 Metal Conveyor Belts — Illustrates entire range of manufacture. Ashworth Bros., Inc., Metal Products Div., Fall River, Mass.

R-873 Rihco Humidifiers And Cooling Systems—Describes new atomizers to lessen air consumption in evaporative cooling systems. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-874 Dynac Brake Motors—Electrical braking of a-c motors-roving, spinning, knitting. Westinghouse Electric Corp., Pittsburgh, Pa.

R-875 Textile Applications For "Scotch" Tape—Some good ideas on using "Scotch." Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

R-877 Industrial Floor Finishes—16-page book contains specifications and descriptions of industrial floor finishes for textile use. Includes directions for application. Minnesota Paints, Inc., 1101 Third Street, South, Minneapolis, Minn.

MATERIALS HANDLING

R-901 Casters And Wheels—Casters and wheels for all applications. Darnell Corp., Ltd., 12000 Woodruff Ave., Downey, Calif.

R-902 Canvas Baskets — Complete line for textile use. W. T. Lane & Brothers, Poughkeepsie, N. Y.

R-903 Overhead Handling Equipment — Shows successful applications of monorail systems. American Monorail Co., 13106 Athens Ave., Cleveland 7, Ohio.

R-905 Conveyor Key Book—How to step-up production with modern conveying. Logan Co., 1115 Franklin St., Louisville, Ky.

R-906 How To Select A Lift Truck—Excellent means for price comparison between similar trucks. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-907 Corrugated Containers — Describes Multi-Unit and Bulk Container. Gaylord Container Corp., 111 N. 4th St., St. Louis 2, Mo.

R-909 Tramrail Engineering And Application — Data on how Tramrail Equipment can cut handling costs. Cleveland Tramrail Div., Cleveland Crane and Engineering Co., 1036 East 289th St., Wickliffe, Ohio.

R-910 How To Specify Packaging — Regulations on shipment, how to determine which package to use. Hinde & Dauch, Sandusky, Ohio.

R-911 New Lift Trucks—Shows latest trends in lift truck design. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-912 Materials Handling For Textiles—Shows how fibre trucks can increase efficiency, protect products. National Vulcanized Fibre Co., Wilmington 99, Del.

R-913 Continuous Power Conveyor—Complete information on Zig-Zag Conveyor. Richards-Wilcox Mfg. Co., Aurora, Ill.

R-914 Stresses On Overhead Tracks —Covers track peening, discusses stresses. Cleveland Tramrail Div., Cleveland Crane & Engineering Co., Wickliffe, Ohio.

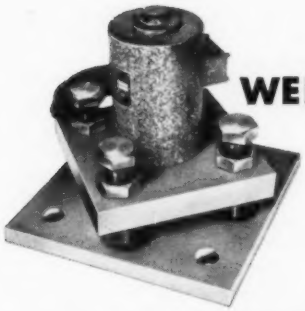
R-915 Scientific Materials Handling —Describes various materials handling devices, includes pictures. Bennett Rose Co., Box 8, Roebuck, S. C.

R-916 Overhead Materials Handling —Treats twin fan ceiling cleaners and shock proof electrification as well. Louden Machinery Co., Fairfield, Iowa.

R-917 Little Packaging Library — Series of booklets covers the business of shipping in corrugated boxes. Hinde & Dauch, Sandusky, Ohio.

R-919 Improved Materials Handling —"Materials in Motion" describes use of fibre containers. National Vulcanized Fibre Co., 1056 Beech St., Wilmington, Del.

R-920 Trucks Doff, Store, Become Spooler Tray—Brochure tells how mobile boxes are being used as doff boxes, storage boxes, and spooler trays on Barber-Colman Spooler. Fisher Mfg. Co., Hartwell, Ga.



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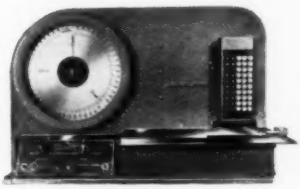

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Personal NOTES
ABOUT MEN YOU KNOW

New officers of the Eastern Carolina Division, Southern Textile Association, are (l. to r.) **Marion Allison,** Eno Cotton Mills, chairman; **T. Bryant Stevens,** Erwin Mills, vice-chairman; **Bill Smith,** N. C. State College, secretary-treasurer; and **Carl Frye,** Pilot Mills, executive committee.

Stanley Piekos has accepted a position as overseer of drawing with M. & F. Worsted Mills, Ashaway, R. I. He previously held a similar position with the Lymansville (R. I.) Co.

A. C. Kerby, Jr., personnel director of Callaway Mills Co., LaGrange, Ga., has been elected president of the LaGrange Lions Club. * * * **Murry Williamson,** textile technologist at the research and development division of Callaway Mills Co., has been presented the American Association for Textile Technology award. Mr. Williamson also received the NACM student honor award, presented each year to the senior in textile technology having the highest scholastic standard during his four years at Alabama Polytechnic Institute.

David J. Meehan has been chosen president of Continental Mills, Inc., Lewiston, Me. He succeeds his father, **George V. Meehan,** who will continue as a director.

E-Z Mills, Inc., Cartersville, Ga., has appointed **Harold E. Towslee** to the post of resident manager. He succeeds **J. W. Gilreath** who will assume new duties.

E. H. Hines has been named an executive vice-president in charge of all worsted manufacturing for Pacific Mills. He had been in charge of manufacturing for the company's Raeford, N. C., plant. Mr. Hines is making his headquarters in Halifax, Va. **John L. Morgan, Jr.,** who has been elected a vice-president of Pacific Mills, is now in charge of manufacturing at the Raeford plant. * * * **Ely R. Callaway, Jr.,** has been named an executive vice-president of Pacific Mills in charge of all worsted fabric merchandising, including the Raeford plant.

Roanoke (Va.) Mills, Inc., has promoted **James R. Stevenson** to assistant production manager. He has been serving as expediter.

The North Carolina State College Alumni Association has presented **Council Claudius Dawson** with the 1958 Meritorious Service Award. Stating that Mr. Dawson has played no small part in bridging the span

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complete removal of size is a first essential

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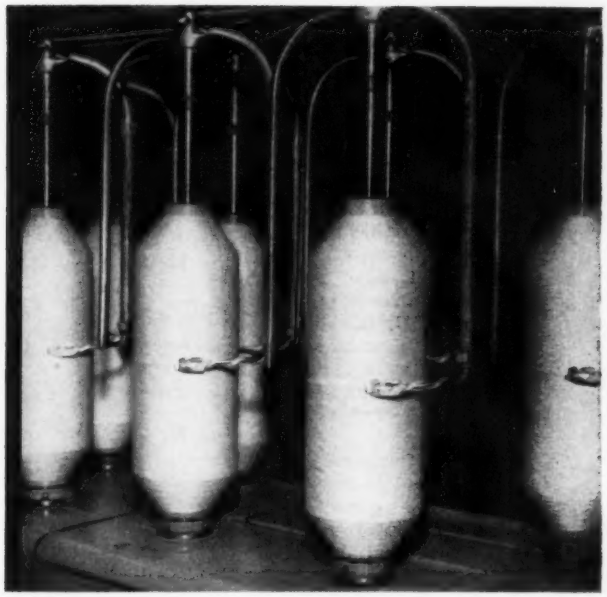
UNEQUALLED FOR DE-SIZING AT HIGHEST TEMPERATURES AND AT HIGHEST SPEEDS

In concentrations to meet every requirement ... in liquid or powder form ... RAPIDASE is universally used for cottons and all fabrics containing man-made fibres.

WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York 16, N. Y.

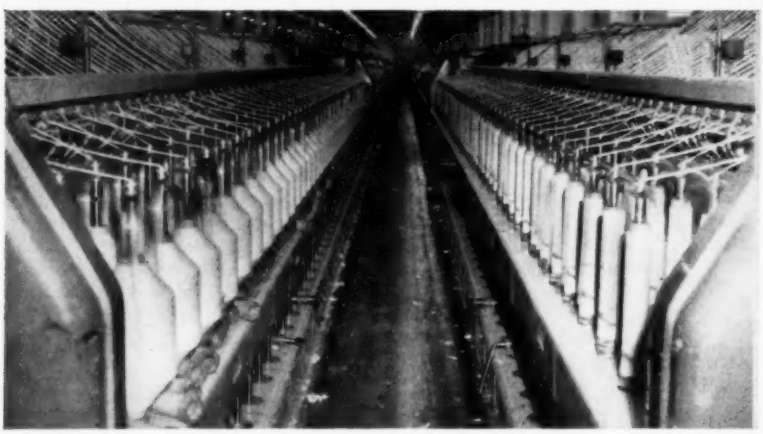
Get more ROVING on all sizes of bobbins

by J. L. C.



New Arro Flyers with High Tension Pressers increase weight 25-40% with no deterioration in quality

We believe this combination gives more roving on bobbins than any other system in the world. The evenness obtained equals or betters production with usual flyers. Weight is increased without increasing the twists per inch or the number of turns around the presser arm.



These frames are producing .60 hank from 70 grain sliver at a spindle speed of 735. Ends down average less than 2 per hank.

In a test recently run in the South on a 10 x 5 slubber with 2.50 hank roving, 1-7/16" combed cotton with a .90 twist multiplier and a spindle speed of 1004 r.p.m., the weight was increased from the normal 28 ozs. net to 39 ozs.—an increase of about 40%.

"Arro" Flyers can of course be put on any frame: for ultimate efficiency we recommend the Platt MS.2 Roving Frame. These streamlined frames produce an even non-stretched roving of superior quality. Vibration and sound have been cut to a minimum. This smoother operation increases the frame's life. The more even roving means fewer ends down in spinning. Before purchasing any new frames, we invite you to write for more information on those made by the *world's largest manufacturer of textile machinery.*

Slubbing bobbins 12" x 6½" dia. containing approx. 64 ozs. of roving, 1.0 hank, can be easily produced from good American cotton.

New "Arro" Flyer has a finish considerably better than previously obtainable. Even the inside of the hollow leg is completely finished. Mill tests have shown that fibre accumulation is reduced at least 25%. Another important feature is that the threading slot is in the leading side of the hollow leg so air enters the slot and prevents escape of loose fibre.

Even if you don't wish to invest in new frames to get heavier packages, consider the proven "Arro" Flyers for your present frames. Over 3,000 are running in the south. Call Gene Bozeman at Charlotte, (FR 5-1640), Harvey Clinch at Greenville, (GR 9-6257), or the writer at Framingham, Mass., (TR 3-7496). Any one of these numbers will give you more information about cost, etc.

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Personal NOTES ABOUT MEN YOU KNOW

between the agricultural past of the state and the modern industrial development of diversified industry, the citation goes on to say, "On a national level, Claude Dawson has exerted a tremendous influence on the textile industry. . . . He has always been an active supporter of our School of Textiles and has much to do with increasing its prestige and widening its reputation."

Textiles, Inc., Gastonia, N. C., has named **John Land** a vice-president. He is also vice-president, treasurer, and general manager of Threads, Inc., a wholly owned subsidiary of Textiles, Inc. At the same time, **Don Maddox,** vice-president in charge of manufacturing, Textiles, Inc., was elected a director and placed on the executive committee of Threads, Inc.

Thomas O. Moore, vice-chairman and general counsel of the P. H. Hanes Knitting Co., Winston-Salem, N. C., has been chosen to serve as president of the Underwear Institute. He succeeds **Robert F. Gregory** of the H. E. Bradford Co., Bennington, Vt., who becomes a member of the Institute's board of directors.

Walter J. Hamburger has been elected vice-president of The Textile Institute, Manchester, England. Dr.

Dr. Hamburger

Hamburger, director of Fabric Research Laboratories, Inc., Dedham, Mass., is the first American to hold office in the Institute.

Willis T. Windle, who joined Mohasco Industries, Inc., Amsterdam, N. Y., as treasurer has been elected vice-president-finance. He will continue his duties as treasurer. **Mark S. J. Farrell** is now serving in the capacity of assistant secretary, as well as assistant treasurer. He has held the latter post for the past two years.

Russell A. Wells has retired from Bemis Bag Co., Bemiston, Ala. He has been with the firm for 46 years, having served in the capacity of manager since 1930. Mr. Wells is succeeded by **Calvin P. Elred,** former assistant manager.

J. P. Stevens & Co., Inc., Greenville, S. C., has realigned management of the company's manufacturing operation according to basic fibers. All of the filament and spun plants are in one division. **H. R. Turner,** vice-president, is general manager responsible for manufacturing operations of the synthetics division. **J. A. White,** vice-president, is assistant general manager for manufacturing of the entire division. **Gaston Jennings** is manager of the Aragon plant, Rock Hill, S. C.; the Monaghan Plant and the Tufting Unit, Greenville, S. C.; and the Victor and Greer Plants in Greer, S. C. Other plant managers remain the same.

Charles Powers has been appointed vice-president of Cabin Crafts, Inc., and general manager of Cabin Crafts, New York. He has been with the firm continuously for 23 years except during four years service with the Marine Corps.

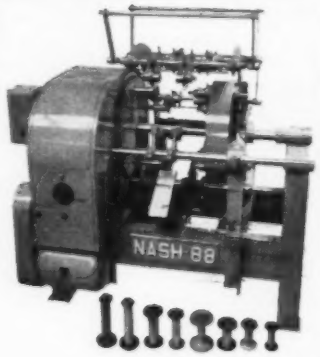
The North Carolina State College Chapter of Phi Psi, national honorary textile fraternity, has presented the "Man of the Year" Award to **Charles H. Reynolds,** vice-president of Spindale (N. C.) Mills, Inc.

Fletcher Jordan, Jr., has been assigned the over-all supervision of the purchasing activities of both Union Bleachery and Carlisle Finishing Co., with headquarters in Greenville, S. C. **William B. Davis** has been made head of the local purchasing department of the Carlisle (S. C.) Finishing Co.

Thomas Robson has been named to the new post of board chairman of Wayne Knitting Mills, Fort Wayne, Ind. Succeeding Mr. Robson as president is **Robert B. Colbert, Jr. R. Edwin Heckman** was named secretary-treasurer.

A. Illges, chairman of the board of Swift Spinning Mills, Inc., has been elected a director of Swift Manufacturing Co., Inc., Columbus, Ga. **Garland Embry,** chief designer, has been named vice-president in charge of the cost department, and **Grover C. Bar-**

REFINISH BOBBINS
Automatically
With This
NASH 88



Keep your bobbins in peak operating condition at lower cost with a NASH "88" Bobbin Refinisher. It handles practically all types of flanged bobbins, has a separate burnishing assembly, cleans as well as finishes, and with a speed of 10 bobbins per minute minimum set-up time is required.

Write for Illustrated Bulletin

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FLEXBOND 306

A polyvinyl acetate-acrylic terpolymer emulsion

FLEXBOND 306 has the properties of an acrylic at the price of an acetate. Flexible, highly water resistant, light stable, adherent, glossy – try this versatile experimental emulsion. Write now for samples and temporary data.

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A 55% solids polyvinyl acetate of unusually high molecular weight . . . intermediate particle size. New VINAC Exp. FA-5, a "fast-breaking" emulsion, is recommended as a binder in the production of non-woven fabrics. Vinac FA-5 stays put – exhibits little tendency to migrate along the fibers – has a high degree of wet tenacity. Samples and temporary data available.

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4 SAVE with the low initial and operating cost of the Mecho Air Guider!

Hundreds of finishing plants bless the simplicity of operating a Mecho Guider. . .no complicated counterweights or linkages! The sensitive selvage finger points the way to important savings! It handles every imaginable fabric from the lightest to #8 duck; is used in plants handling woven and non-woven fabrics, semi-rigid plastics, artificial leather, rubber, felt and gauze. Constant cloth alignment is maintained at all times.

The precision-engineered accuracy of the Mecho Air Guider, guiding to within an eighth of an inch and ranging from 1 to 400 ypm, is unsurpassed! Stainless steel, acid and moisture resistant units with sealed bearing are also available.

Mecho offers a valuable Guiding Service. Phone, wire or write for your catalog today. Learn how the Mecho Air Guider can save dollars for you.

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427 W. Rock Ave.
New Haven 15, Conn.

Personal NOTES ABOUT MEN YOU KNOW

field, Jr., is serving as vice-president in charge of sales in the upholstery and drapery department.

G. Everett Clitter has retired from his position as vice-president in charge of manufacturing of A. & M. Karagheusian, Inc., Freehold, N. J. He will continue as a director. * * * **Bob Henry** has assumed his new duties as personnel manager in the company's Freehold, N. J., division. Before his promotion, he was personnel manager at the Albany, Ga., division.

Mr. Clitter

Mr. Henry

John F. Matthews has been elected president of Forstmann Woolen Co., Passaic, N. J., succeeding **James Wilson** who has resigned. At the same time **Carle Gerdes** was elected treasurer.

Charles Evans, a recent A.P.I. graduate, has joined the Albany (Ga.) division of A. & M. Karagheusian, Inc. He is currently undergoing training in the techniques of tufted carpet production.

Ludlow Manufacturing & Sales Co., Needham Heights, Mass., has appointed **Robert J. Saunders** to the newly-created post of vice-president and assistant to the president.

Worth G. Kirkman, formerly a superintendent with Pilot Mills Co., Raleigh, N. C., has joined the Dow Chemical Co.'s textile research staff at Williamsburg, Va.

Mr. Kirkman
Dow Chemical Co.

Mr. Townsend
P. T. I.

Horace Townsend, Jr., has joined the staff of Philadelphia Textile Institute as professor of management and marketing and head of the department.

OBITUARIES

Arthur W. Bachman, 59, Reading, Pa., sales representative for Alfred Hofmann Needle Works.

Chester M. Casey, industrial relations director for Chicopee Manufacturing Co., Goffstown, N. H.

Murray Feiner, 39, head of styling and development, synthetics div., Malden (Mass.) Knitting Mills.

Charles H. Haynes, chairman of the board, Cliffside Mills, Cliffside, N. C.

Charles F. Holcombe, 78, retired textile mill executive, Avon, N. Y.

Herbert H. Hughes, 58, board chairman of Cotswold Fibres, Inc., Columbus, Ga.

Albert R. Jenny, 49, sales manager of Jersey State Chemical Co., Glen Rock, N. J.

Woodford A. Kennedy, 63, president of W. A. Kennedy Co. and WAK Industries, Inc., Charlotte, N. C.

Lindsay Kester, 61, a vice-president of Carolina Narrow Fabrics Co., Winston-Salem, N. C.

William Mayer, 89, co-founder of Rosedale Knitting Co., Reading, Pa.

Arlie B. Owen, 75, textile mill executive, Gibsonville, N. C.

T. Ellis Ramsdell, 80, retired textile mill executive, Great Barrington, Mass.

W. E. Remmington, 86, retired department manager of American Woolen Co., Ridgewood, N. J.

John J. Riley, 73, retired textile mill executive, Boston, Mass.

John H. Sadler, 71, vice-president Jefferson Woolen Mills, Knoxville, Tenn.

George W. Smith, 63, former New England textile leader, Durham, N. C.

Robert White, 76, owner of Superior Woolen Mills, Frankfort, Ky.

Claude F. Williams, 72, former purchasing agent of Erwin Mills, Durham, N. C.

Arthur Worth, 52, plant superintendent of Regent Knitting Mills, Ltd., Montreal, Quebec.

What the TEXTILE MILLS are doing

Wunda Weve Carpet Co., Greenville, S. C., has increased its number of weavers by 10 per cent. At the same time, the company is increasing production of cotton, nylon, and wool carpeting.

Wooltextile Mill, Standerton, a small town in the Transvaal, South Africa, is said to be turning out 600,000 yards of worsteds and 100,000 yards of woolens annually. The concern is located in a converted aerodrome, formerly a wartime training camp. Equipment includes 60 American-made, fully automatic looms.

A cancer education film is scheduled to be shown to the employees of the six textile towns of Chattahoochee Valley. **West Point Mfg. Co.,** is sponsoring the program.

The Alabama Textile Manufacturers Association has announced that for the fourth consecutive year **Tallassee Mills** has won the safety award sponsored by that organization for the year 1957. Last year Tallassee took permanent possession of the Comer Safety Trophy by winning it for three consecutive years (1954, 1955, and 1956). **Huntsville Mfg. Co.** and **Bemis Bros. Bag Co.,** tied for second place among the weaving mills. Among the spinning mills **Anniston Cordage Co.** captured first place with an accident-free 1957 (this firm was second place winner in 1956), **Lined Thread Co.,** came in second, and **Boaz Mills** won third place. Showing the most improvement in safety during 1957 in the spinning division was Boaz Mills; while capturing that honor among spinning and weaving plants was **Bachman-Uxbridge Worsted Corp.,** Talladega. The awards were made at the ATMA's annual meeting at Biloxi, Miss., April 16-18.

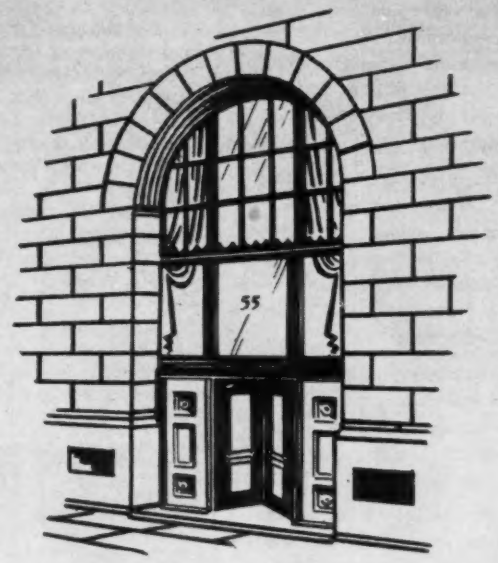
James Lees and Sons Co. has sold property, including warehousing facilities, in Bridgeport, Pa., to Minter Brothers. Lees emphasized that the carpet company's modern Bridgeport office building was not involved in the sale. It will continue to serve as the company's headquarters for its executive and administrative personnel. In addition to the office building, Lees will lease back 40,000 sq ft which will be renovated and used for a laboratory, product research facilities, offices, cafeteria, etc.

A new ribbon plant has been opened by **Hallmark Cards** in Lawrence, Kans. The two-level, air-conditioned structure housing the equipment has 100,000 sq ft of floor space.

A stretch stocking gaining its elasticity from the knit of the yarns has been developed and patented by Herbert Knohl and assigned to the **Kendall Co.,** Boston, Mass. The new method of producing stretch hosiery is said to be far less expensive than that involving thermoplastic crimping and regular knitting.

Our service is tailored to provide all the working capital any qualified client needs, without increased borrowing, diluting profits or interfering with management.

Information available for any manufacturer or distributor with $500,000 or more annual sales.



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Dixisteel Hot-Dip Galvanizing meets ASTM specifications. Small, tight spangles—smooth, uniformly heavy coats of zinc, without burrs or fins—assure complete satisfaction and positive protection against rust and corrosion.

Many textile equipment manufacturers and mills use our facilities to hot-dip galvanize racks, card holders, bobbin transports, pirn and pin trucks.

Find out how little it will cost to re-galvanize your equipment. Send complete description and dimensions for a free estimate without obligation.

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What the TEXTILE MILLS are doing

A new cotton yarn of the bulk type, and with wool and silk finishes, is reported to have been developed by **Aberfoyle Manufacturing Co.**, Philadelphia, Pa. Developed at the company's Rex Mills at Belmont, N. C., the yarn is called XX-2 and is produced in 12s to 24s. Suitable for knitting or weaving, the yarns are predyed, washable, and wrinkle resistant.

Construction has begun on a new plant for **Alice Manufacturing Co.** in Easley, S. C. Plans are to build half the 250,000 sq ft building first, with the over-all project to be completed within two or three years. The plant will house approximately 40,000 spindles and related equipment.

U. P. D., Inc., a wholly owned subsidiary of **Allen Knitting Mills, Inc.**, has purchased buildings from the Kendall Co. in Thrift, N. C., to house a newly formed company, called **Thrift Dye Works, Inc.**, which will specialize in dyeing and finishing of jersey fabrics. * * * Also to be located there is the southern knitting plant of **Standard Textile Mills, Inc.**, another Allen division. Circular knitting machinery and other equipment from the Charlotte, N. C., plant is already in operation at Thrift, and new machinery to be added is expected to increase Standard's jersey output to over 500,000 lb monthly, a 50 per cent increase over present production capacity.

A new 20,000 sq ft warehouse and pre-blending room will represent an additional investment of approximately $120,000 in the physical properties of the Clover, S. C., plant of **American Thread Co.**

Barringer Hosiery Mills, Newton, N. C., recently ceased operations. The mill manufactured full-fashioned ladies' hosiery and employed 15 people.

Callaway Mills Co., LaGrange, Ga., is again sponsoring a garden contest for all employees. The purpose of the contest is to encourage and assist employees of Callaway Mills to have better vegetable gardens.

Charter Oak Textile Print, Inc., has begun operations in Norwich, Conn., in buildings previously occupied by the former Ahern Textile Printing plant. Charter Oak will produce prints on drapery and upholstery fabrics. It was estimated that the work force may eventually reach 75.

Columbian Rope Co., Auburn, N. Y., has developed a filament nylon motor starter rope, 42 inches long and 9/64th of an inch in diameter with an extra hard lay. It is used for starting of small motors.

Cabin Crafts, Inc., Dalton, Ga., has made an international licensing agreement with a French firm, Etablissements Balsan de Chateauroux. The agreement includes rights to techniques of tufting, overstitching, and the use of patterns. Cabin Crafts presently has similar agreements with concerns in Australia, New Zealand, and South Africa. Royalties are invested in expanded research and styling for the rug and carpet line.

Lebanon of California, Los Angeles, Calif., has announced plans for a cotton knit, dyeing, and finishing plant, with operations to start by August 15. The firm is presently pro-

Clair Flynn, superintendent of the Senatobia, Miss., plant of THE WILLIAM CARTER CO. recently played host to superintendents of Carter's six other plants. Pictured are, first row: H. Horace Otway, vice-president; Roland Reilly, Springfield, Mass., mill; Lyndall F. Carter, executive vice-president; and Mr. Flynn. Second row: Charles E. Walker, Barnesville, Ga., mill; Dallas P. Kindt, Gilbertville, Mass., mill; W. H. Smith, Forsyth, Ga., mill; and James E. Pruett, Thomaston, Ga., mill. Present but not pictured was Joseph Mahar, Needham Heights, Mass., mill.

TON-TEX Ve-E-zy SEGMATIC V-BELTING

Mile after mile of Ve-E-zy speeds production in industry on V-Belt drives. Made of segments punched from Ton-Tex Belting stock, and coupled with special clamping bolts and nuts.

- Reduces inventory
- Adjustable to any length
- Provides "off-the-spool" service
- Easily and quickly installed
- Delivers maximum power

A, B, C and D Sections — Fits all standard sheaves — 50 and 100 foot spools, in regular and Oil-Ex (oil and heat resistant) construction.

Time tested for 20 years.

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Looking for a way to speed-up production? Start with materials handling. Clumsy, makeshift handling methods cause frequent delays—big losses.

Quick cure for materials-handling holdups are *job-designed* Kennett Receptacles. Here's why . . .

LIGHT WEIGHT. Because Kennett prime movers are compact and light, even women employees find them easy to lift and move. Result: fast, smooth transportation of materials.

SMOOTHNESS. Hard, glass-smooth surfaces permit materials to feed freely into and out of Kennett Receptacles. Toughness and resilience prevent dents, breaks and cracks that snag materials.

LONG LIFE. Hard *vulcanized fibre* by National stands up to hard use—takes years of punishment without damage. You'll get full value in service from every Kennett Receptacle you buy.

There's a standard or special Kennett Receptacle for every textile handling job. Our new folder, "Materials Handling in Textile Plants," gives full information. Write today for your free copy.

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GEARS & CAMS

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Years of PROOF in todays HIGH-SPEED equipment make these No. 1 in their field.

Samples Upon Request

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P.O. Box 101 Phone 2-1428
MACON, GA.

What the TEXTILE MILLS are doing

ducing wool and synthetic jerseys at 905 East 8th St., Los Angeles.

Woonsocket (R. I.) Spinning Co. has increased its mill capacity by 100,000 pounds of yarn per year with the addition of two sets of new cards.

Hunter Hosiery, Inc., Laconia, N. H., plans to increase its output of seamless hosiery by some 30% with the addition of 20 more machines.

A group of fur-like scatter rugs, bearing the trade name "Pouff," has been introduced by PRINCETON KNITTING MILLS, Watertown, Conn. Made of Acrilan and dynel, the deep-pile rugs are offered in a choice of fourteen colors. The special blend of acrylic fibers make the rugs washable, moth- and mildew-proof, fire-resistant, and non-matting for easier care and longer wear.

Dana Warp Mills, Westbrook, Me., has been sold to the operators of **Spencer Worsted Co., Inc.,** Pawtucket, R. I.

"Higher costs and lower prices" were the chief factors cited in the closing of the New Milford, Conn., plant of **Robertson Bleachery & Dye Works.** The firm had been in operation since 1917.

Roxbury Dyeing Corp., Paterson, N. J., has been granted charter of incorporation. According to the announcement, the dyeing and finishing plant will be located at 168 E. Fifth St.

Rudin & Roth has purchased the **Anthony Hosiery Mill** in Hickory, N. C. The mill is being operated as a division of Rudin & Roth under the name of **Betterwear Hosiery Mill, Inc.,** after a brief shutdown for alterations and improvements.

Scranton (Pa.) Lace Co. has announced a change in name to **Scranton Corp.** The name change was occasioned by diversification of activities over and above the manufacture of lace products.

Standard Knitting Mills, Inc., Knoxville, Tenn., has completed a brick, concrete, and steel addition providing 60,000 sq ft more of manufacturing, warehousing, and shipping space. Company spokesmen claim that this latest expansion makes the firm the largest knitwear plant under one roof in the country. More space is available for future expansion.

On Monday, April 28, **Avondale Mills** began its thirty-sixth annual inspection with visits to the villages, schools, kindergartens, plants, etc., of the Pell City and Birmingham, Ala., installations. Similarly, guests were conducted through the activities at Sylacauga and Sycamore on April 29, through LaFayette and Alexander City on April 30, and through Stevenson on May 5.

Springs Cotton Mills recently sponsored an art contest through the Lancaster (S. C.) County Art Association offering prizes totaling $450.00. Rules stipulated that entries must be original paintings or drawings of the Fort Mill office building or some other building of the Springs Cotton Mills, in oils, water color, or any other medium. An additional "release prize" of $200.00 was to be awarded for each picture deemed suitable for advertising purposes.

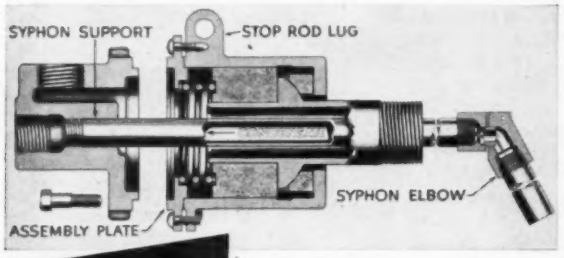
Purchase of new equipment will increase the production of seamless hose at **Darlene Hosiery Mills, Inc.,** by an estimated 55 per cent.

Fawcett Mills, Inc., and **National Textile Processing Corp.** have merged and are now operating in New Bedford, Mass., under the Fawcett Mills name. As a result of the merger, Fawcett is able to offer a complete cotton textile finishing service. Approximately 175 people are employed.

The **USF-Aspinook Finishing Div.** of Gera Corp., Norwich, Conn., has announced plans to suspend all operations. Methods of keeping the plant open are being discussed by company, city, and state officials.

TRY THIS on your Dry Cans and 30" Slasher Cylinders

We'll gladly furnish a pair of these units for 90-day obligation-free trial in your mill. The Type SB2P is self-supporting, completely packless, needs no lubrication or adjustment. The Johnson Syphon Elbow permits the use of two straight pipes instead of an unwieldy curved syphon pipe, is hinged to pass right through the joint.



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Shows self-supporting Johnson Joints for all needs . . . on print cans, calenders, compressive shrinkage ranges, big 5' and 7' cotton slashers, dry cans, etc.

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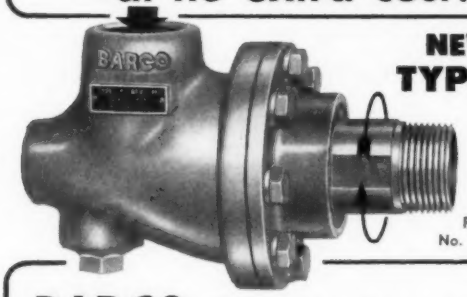

NEW TYPE C

Patent No. 2 031 439

BARCO Rotary Joint

For countless applications, Barco's new Type C Rotary Joint will give you the best operating records you've ever had—*and for LESS COST!*

"CRACK-FREE" CHROME PLATED SLEEVE—A standard Barco feature. Minimizes corrosion, friction, wear. Stainless steel spring also standard.

RESISTS SEAL RING BREAKAGE—The spherical seal ring is under compression, not *tension*, loading. Self-adjusting for wear.

WIDE SPACED BEARINGS—Two, instead of one . . . increased bearing area. No lubrication required. Lowest friction.

200 P. S. I. STEAM RATING—Heavy duty service at *no extra cost.* Eight sizes, ½" to 3". *Send for new Catalog 310 today.* **BARCO MANUFACTURING CO., 574H Hough Street, Barrington, Illinois.**

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Increase singeing speeds 75% and more . . .

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Kemp Radiant-Flame Compression Singeing equipment can speed up your operation from 75% to 100%. . . drastically reduce costs for labor, maintenance, and fuel . . . and still turn out a *better product!*

Kemp singeing is a high-speed operation, ideal for modern fabrics. Material travels over burners in a split second; is brushed by a solid mass of flame for a closer, more even singe. The unique Kemp *pre-mix* concept . . . the mixing of oxygen and fuel gas *before* ignition . . . eliminates excess oxygen in the combustion chamber formed by the burner head and rapidly traveling material. Thus, the nap is not burned, but *carbonized* and carried away by escaping combustion gases. The resulting singe is cleaner, faster, and cheaper.

Your Kemp Representative will gladly give you full information and recommendations to speed up your operation. Call him, or write us for Bulletin 6-A. The C. M. Kemp Mfg. Co., 405 E. Oliver St., Baltimore 2, Md.

KEMP OF BALTIMORE

What the TEXTILE MILLS are doing

The Carter plant of **J. P. Stevens & Co., Inc.,** in Wallace, N. C., has expanded its dyeing-finishing capacity through the addition of new equipment, including an additional tenter frame and four dye machines. A new 50,000 sq ft warehousing area, designed to speed deliveries, provides storage for grey goods awaiting finishing and for inventory, packaging, and shipping of the final product. * * * The Stevens organization has realigned the management of its manufacturing operations into divisions according to basic fiber. George P. McClenaghan, vice-president and director, has charge of the cotton division; W. J. Carter, executive vice-president and director, continues in charge of the synthetics division which has been expanded to include plants in Greenville, Rock Hill, and Greer, S. C.; John P. Baum, vice-president and director, will continue in charge of the woolen and worsted division; and James Harrell, vice-president, will continue in charge of the finishing division. Besides their respective manufacturing operations, the divisional executives are responsible for co-ordinating manufacturing with merchandising in their divisions.

The Trion (Ga.) Div., **Riegel Textile Corp.,** is now manufacturing wash-and-wear fabrics.

A series of plant tours for members of employees' families has been arranged at **Union Bleachery,** Greenville, S. C. It is felt that employees' wives, husbands, children 14 years of age and older, and mothers and fathers of unmarried operatives will enjoy the privilege of seeing the place where the family member works.

The transfer of the netting manufacturing operations to the Blue Mountain, Ala., mill of **Linen Thread Co.** is nearing completion. These activities were formerly carried on in the Chicago and Baltimore plants. A building addition has been completed in Blue Mountain to provide space for machinery coming from Baltimore. The Chicago operation is already closed.

Myron Herschler is head of the newly formed Department A of **M. Lowenstein & Sons, Inc.,** New York City. The department was organized to create and develop knitted fabrics in plains and prints for the men's, women's, and children's wear trades.

The **Lyman (S. C.) Printing and Finishing Co.** has added new facilities at the Lyman Lake Recreation Area, opened last year for its employees. Seven new aluminum fishing boats may be rented at a nominal fee. Other facilities include a playground for young children and a lodge for picnickers.

The **Maiden (N. C.) Spinning Mills,** in an expansion move, has completed a new dye plant. Heretofore, the firm has produced undyed knit goods, but it is now going into the complete finishing of the product.

All facilities of the Calhoun plant of **Mayfair Chenilles, Inc.,** are now housed in the recently completed 38,500 sq ft addition in Dalton, Ga. Mayfair is the tufting division of Collins & Aikman Corp.

Maryon Hosiery Mill, Carrollton, Ga., has purchased fourteen new type argyle knitting machines designed to make men's and boys' socks such as are normally imported from Scotland and foreign countries. It is said that only fifty of these machines have been built so far.

The West Point (Ga.) Manufacturing Co., in cooperation with the Georgia Division of the American Cancer Society, recently conducted a thorough educational program on the detection of cancer. A documentary television film entitled "Just by Chance" has been prepared describing the series of chance events leading up to the intensive program, which has been described by the American Cancer Society as "the most comprehensive job done by an American industry."

Work has begun on a reported $1 million expansion program at Greenville, S. C.'s **White Horse Mill,** a division of Maverick Mills. No addition to the building is planned, though interior construction will be necessary. New equipment will include 12,000 spindles and 300 looms. About 100 operatives will be added.

Operations are slated to begin on July 15 in the new **Whitmire (S. C.) Hosiery Corp.** plant. The firm will manufacture ladies' seamless hose and will employ approximately 100 persons when in full operation. J. Frank Tew will be manager.

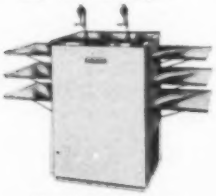
Halsey Taylor® offers a wide variety of newly styled health-safe coolers

EXPLOSION-PROOF model for use where continuous temperatures exceed 110°

COMBINATION High and Low-Level for use of children and adults

STAINLESS STEEL Cabinets to fit any modern decor

LOW-LEVEL type for schools and wherever "small fry" gather



CAFETERIA type for factory and restaurant use

You'll find Halsey Taylor coolers just right for commercial or industrial applications. They are available in air-cooled or water-cooled models, with sturdy life-time cabinets and sanitary two-stream projectors. Write for catalog or see Sweet's.

The Halsey W. Taylor Co., Warren, Ohio

W3

SUPPLIERS News

WHAT THEY ARE DOING

The rayon tire yarn spinning facilities of **American Viscose Corp.** will be converted to produce "super, super" tire rayon, in 1100/2 construction, to the ultimate elimination of previous yarns. Conversion is expected to require several months.

The nylon plant of **Chemstrand Corp.** has received the Award of Honor, highest recognition bestowed by the National Safety Council, for its "outstanding safety performance in 1957." It is the fifth time the Chemstrand plant has received the award since the chemical textile fiber firm began operations in Pensacola, Fla., in 1953. * * * Chemstrand's research and development center in Decatur, Ala., has developed an improved method for the application of cationic dyestuffs to acrylic fiber. It has been found that by applying the dyestuffs under weakly alkaline conditions "very substantial increases in color value can be obtained in shorter dyeing times." * * * William F. Brommelsiek has been appointed dyehouse manager and group leader in the dyeing and finishing department of Chemstrand's research and development division. He will supervise activities at the firm's new commercial demonstration dyehouse in Decatur, Ala. Author of a number of technical papers on dyeing techniques, Mr. Brommelsiek was previously assistant director of research for Forstmann Woolen Co.

Westinghouse Electric Corp. plans to build a product distribution center, to be completed early in the fall, in New Orleans, La. The center will consolidate sales offices in that area which handle air handling and air cleaning equipment along with other Westinghouse products.

C. C. Powell has been appointed Multigraph branch manager and D. F. Greene, Jr., has been named Addressograph branch manager to serve

Mr. Powell

Mr. Greene

the Charlotte, N. C., area of **Addressograph-Multigraph Corp.** Both Mr. Powell and Mr. Greene plan to reside in Charlotte.

Richard Neuer has joined **Stein Hall & Co., Inc.,** as a sales representative in the company's New York branch sales office. He will be concerned with the sale of starch products to the textile and other industries.

AMERICA'S SPRING STEEL DISTRIBUTOR

We have had over fifty years experience furnishing steel for both builders of TEXTILE MACHINES and makers of replacement parts for KNITTING MACHINES.

Modern Slitting and Shearing Equipment

WARD STEEL CO.

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MODERNIZATION PROGRAMS
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Specializing in Textiles Since 1914

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G. S. HAND TACHOMETERS and SPEED INDICATORS

for MAXIMUM PRODUCTION

IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES - FOR TEXTILE AND POWER PLANTS.

1% Accuracy for any range from 30 to 100,000 RPM or surface speed. Antimagnetic durable mechanism. Efficient repair service at moderate charges.

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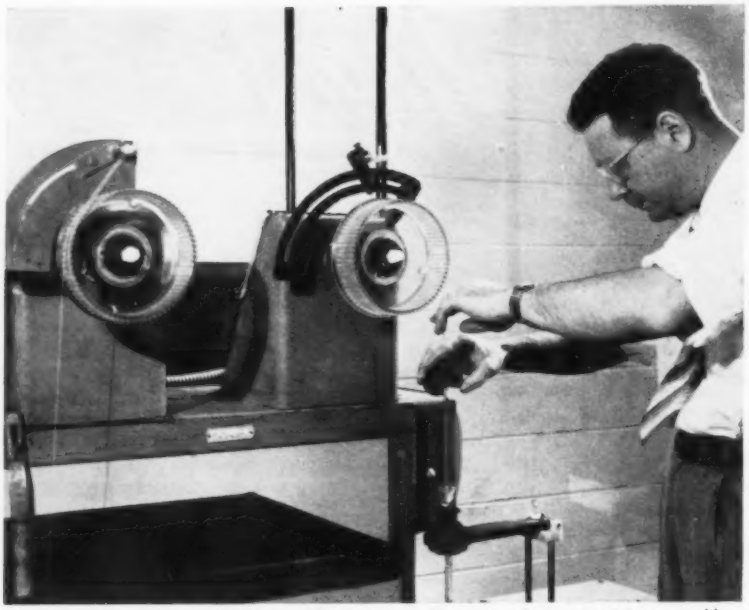
SUPPLIERS News
WHAT THEY ARE DOING

Bleaching of fabrics at Du Pont's new Electrochemicals sales service laboratory.



Mass pigmentation of textile fibers at Du Pont's new Pigments sales service laboratory. Here the machine is being used for making viscose rayon pigmented with a new fade-resistant "Monastral" red, which will be commercially available next fall.

The Du Pont Co. has opened a new $5 million laboratory to provide service to customers and for the evaluation of new or improved products of the company's Electrochemicals and Pigments departments. Although some facilities are shared jointly by the two departments, the building houses separate laboratories for product development in the textile, paint, metals, plastics, paper, ink, and allied chemical fields. For both departments the laboratory provides a center for research work on problems of customers, for customer visits, development work on new products, and new uses for established products, and training of field technical representatives. The laboratory contains 81,000 sq ft of floor space, including 150 separate rooms, laboratories, and demonstration areas. The technically trained staff of 130 includes chemists, chemical engineers, metallurgists, and other specialists.

Glenn Henderson has joined the textile division of **Clinton Corn Processing Co.** as sales representative. Mr. Henderson resides in Greenville, S. C.

The United States Patent Office has issued U. S. Patent No. 2,832,099 to **McDonough Power Equipment, Inc.,** for their Universal Card Coiler. 24 separate claims have been allowed. Other foreign and domestic patents are now pending. The Universal name stems from the fact that the McDonough coiler fits any make card without special modifications, and can be installed in 30 minutes time.

Albert P. Shutts has been promoted to sales manager of **Becco Chemical Div.,** Food Machinery and Chemical Corp. His headquarters are at the company's main office in Buffalo, N. Y. * * * Becco Chemical Co. has named Dewey H. Nelson division manager at the main plant in Buffalo. He replaces Frederick A. Gilbert who was recently appointed general manager of FMC's new Inorganic Chemicals Department of which Becco is a part.

Mr. Nelson

Dayton Rubber Co. has signed an option on a 62-acre site in Springfield, Mo., where it plans to construct a mechanical rubber goods manufacturing plant. * * * Millard D. Coate has been named manager of customer service and Lester J. Adams appointed merchandise manager for the Mechanical Goods Div., Dayton Rubber Co. Both positions were created as a result of expanded operations. At the same time, Norman G. Lever was promoted to sales manager for the industrial division, being succeeded by Thomas E. Farrell in the position of midwest regional manager. K. C. Sparks was named regional manager for the west coast.

James E. Butler has accepted a position as sales promotion manager for **Ridge Tool Co.** He will maintain his headquarters at the company's main office in Elyria, O.

J. O. Ross Engineering Division of Midland-Ross Corp. has started construction on a new office building in suburban Chicago. The new building will include facilities for Chicago personnel of the John Waldron Corp. and the Hartig Extruder Division, both of which operate as part of the J. O. Ross Engineering Division.

A. E. Staley, Jr., has been elected chairman of the board and chief executive officer of the **A. E. Staley Manufacturing Co.** E. K. Scheiter has been chosen as president. Donald E. Nordlund, who heads the company's legal division, was named a vice-president, a director, and a member of the executive committee.

H. Thomas Lilly has been added to the sales staff of **The Duplan Corporation** at its Winston-Salem office. This is part of a program to improve service to company customers in the Carolina-Virginia area.

Guy P. Carpenter has accepted a position on the sales staff of **Proximity Print Works,** a division of Cone Mills Corp. Mr. Carpenter's duties will include solicitation of finishing for Proximity.

Haven A. Morrison has been appointed to the sales force of **Putnam Chemical Corp.** His territory will be the New England area.

J. E. Rhoads & Sons has appointed Warren F. (Bud) Decker as midwest manager in Chicago. J. Warren Mitchell has been named southern manager with headquarters in Atlanta, Ga.

Construction has started on a new plant in Owensboro, Ky., for the **Dewey and Almy Chemical Co.,** Div. of W. R. Grace & Co. It will manufacture acetate polymers and vinyl acetate copolymers for textile sizing, rug backing, etc.

Wencel A. Neumann, Jr., has been elected president of the **De Laval Separator Co.** and De Laval's west coast subsidiary, De Laval Pacific Co.

Verona Dyestuffs Division of Verona-Pharma Chemical Corp. has appointed two new southern representatives: John W. Sutton's territory includes Tennessee and parts of South Carolina. He resides in Greenville, S. C. Theodore T. Howe is representing the firm in Alabama and Georgia. They will report to the southern branch office in Rock Hill, S. C.

Raschel knitting machines manufactured in Germany by Wilhelm Barfuss are being sold in this country through a new agency, **Barfuss Corp.,** 286 Fifth Ave., New York City.

American Cyanamid Co. has started construction on a multi-million dollar anthraquinone manufacturing facility at its Bound Brook, N. J., plant. The new unit will be operated by Cyanamid's Organic Chemicals Div.

Chemetron Corporation is the new name of **National Cylinder Gas Co.** The reason given for the change is that the company as a whole has outgrown it through continued diversification and expansion. One of the company's seven divisions now bears the "National Cylinder Gas" name.

William B. Mason has been promoted to the position of general sales manager of **Intex Chemical Corp.** He will make his headquarters at the company's general offices.

The Yale and Towne Manufacturing Co. has established a factory branch for the sale and service of industrial lift trucks in San Diego, Calif. The new branch is under the direction of James B. Cunningham. * * * Roy Perler has been promoted to eastern regional sales manager of Yale Materials Handling Div., Yale & Towne Mfg. Co.

Exide Industrial Division of **The Electric Storage Battery Co.** has become the exclusive marketing organization for battery-charging equipment manufactured by **The Electric Products Co.** In addition to chargers designed for floor- and wall-mounting, Exide now markets chargers for integral mounting on batteries used to power electric industrial trucks.

Reginald F. Murphy has been transferred to the Boston sales office of **Warren Pumps, Inc.**

The Vacuum Equipment Division of **F. J. Stokes Corp.** has opened a new sales office at 77 Bedford St., Stamford, Conn. with John C. Coleman as manager. The office will serve all of New England, the Bronx, and all of Long Island.

Crompton & Knowles Corp. has arranged to make the Loepfe optical electronic bobbin feeler available on new C&K looms, and for C&K looms now in use, according to Hans J. Theiler, president of **H. J. Theiler Corp.,** general U. S. and Canadian sales agent for the mechanism.

Vickers-Sperry of Canada, Ltd., has opened a new sales, service, and repair office in Vancouver, B. C. The warehouse maintains a stock of spare parts, in addition to pumps, valves, and other components. The service department is qualified to repair all Vickers equipment. W. J. Johnson is manager of the new office and A. J. Macdonald is service representative. * * * Vickers, Inc., has promoted Donald Rhodes to the position of district sales manager at Rochester, N. Y. He replaces Al Trail who has been transferred to head the Vickers office at Cleveland, Ohio.

Sarco Manufacturing Corp. has started construction on a new factory wing which will be devoted exclusively to the manufacture of steam traps. Completion of the new building is scheduled for mid-summer.

Layton-Greenfield, Inc., has appointed Everett L. Porter to the position of field sales engineer. Mr. Porter was previously associated with Rodney Hunt Machine Co.

Mr. Mickel
Daniel Constn.

Mr. Polk
Appleton Mach. Co.

Mr. Quinn
Synthane Corp.

Mr. Prince
Hartford Rayon

Buck Mickel has been made vice-president and assistant general manager of **Daniel Construction Co.,** Greenville, S. C.

Doven Machine and Engineering, Inc., has been acquired by **The Appleton Machine Co.** The firm has been moved to Appleton, Wis., and is operating as the Doven Div., Appleton Machine Co. * * * Robert C. Polk has joined Appleton Machine Co. as sales engineer. He will coordinate sales, design, and production of rewinders.

John W. Quinn has been named to represent **Synthane Corp.** in Vermont, western Massachusetts, northeast Connecticut, and northeast New York. He will make his headquarters in Springfield, Mass.

Wesley L. Prince, Jr., has been named southern district sales manager for **Hartford Rayon Co.** He will cover a five-state area consisting of Georgia, Alabama, North and South Carolina, and Tennessee. Mr. Prince will make his headquarters in Atlanta, Ga.

James L. Morrison, president and founder of **Morrison Machine Co.** was recently honored on the occasion of the firm's 50th anniversary. The festivities, held at the Alexander Hamilton Hotel, Paterson, N. J., were attended by the firm's representatives throughout the nation and from abroad, as well as civic and industry leaders. Employees presented Mr. Morrison with a large bronze plaque and a desk-sized silver miniature plaque.

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ANDERSON SHIELDS
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NEW
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POSITIVE-LATCHING
BALL BEARING
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- POLISHED ALUMINUM SURFACES
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- PAT. DESIGN ELIMINATES MOST OPENINGS AND LINT CHOKING
- LOWEST COST OF ANY POSITIVE—ALMOST AS LOW AS SPRING BOBBIN HOLDERS
- SERVICED FOR LIFE AT ASSEMBLY AND DOUBLE RIVETED—CAN'T FALL APART
- ONE BOBBIN FALL COSTS IN DIRTY YARN AND LOST TIME ENOUGH TO PAY FOR A WHITEHEAD HOLDER

ALL THIS FOR ONLY **46¢**

SPECIFY WHITEHEAD BOBBIN HOLDERS
ON YOUR NEW CREELS—THROUGH ALL
THE BEST CREEL MANUFACTURERS

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WHITEHEAD DIE CASTING CO.
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SUPPLIERS News — WHAT THEY ARE DOING

The New York sales office of **Emery Industries, Inc.,** has moved to new quarters at 1 Exchange Pl., Jersey City 2, N. J.

J. E. Sirrine Co. has announced the election of new officers as follows: A. S. Bedell, chairman of the board; R. R. Adams, president; A. D. Asbury, vice-president and secretary; J. H. Bringhurst, Jr., G. W. Cumbus, H. S. Forrester, D. G. Moon, G. R. Morgan, M. M. Stokely, H. C. Swannell, and George Wrigley, Jr., vice-presidents; and J. L. Roberson, Jr., treasurer.

Stowe-Woodward, Inc., is offering colorful stickers which say "Whatever you buy in textiles 'made in U. S. A.' gives you quality you can trust" as a service to the textile industry. Small quantities of the promotion stickers will be provided by

the firm free of charge, and large quantities for commercial use will be provided at cost to help promote American textiles. Sample stickers and quantity prices can be secured from Stowe-Woodward, Inc., P. O. Box 851, Griffin, Ga., or the firm's plant in Newton Upper Falls 64, Mass.

In a move for added diversification, **Whitin Machine Works** has acquired the **Landis Machine Co.,** manufacturers of shoe repair machinery. Purchase of the outstanding stock was made by Fayscott Corp., a wholly-owned Whitin subsidiary. Whitin president, J. Hugh Bolton, stated, "Diversification will in no way affect our basic role of manufacturing textile machinery."

Manufacture of Parks & Woolson wet and dry finishing machinery will continue at that company's plant in Springfield, Vt., according to the new owners, **Riggs & Lombard, Inc.** This decision countermands an announcement in the June issue of this magazine that Parks & Woolson personnel and operations would transfer to the Riggs & Lombard base in Lowell, Mass.

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West Point, Georgia

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MACHINERY MANUFACTURER WISHES SALES REPRESENTATION ON COMMISSION BASIS IN MIDDLE ATLANTIC AND MID-WEST STATES BY INDIVIDUALS CURRENTLY CALLING ON DYEING, BLEACHING, AND FINISHING PLANTS IN NON-CONFLICTING LINE. MUST BE FAMILIAR WITH EQUIPMENT AND PROCESSES. Reply to Box 33, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Ga.

Position Wanted

HOSIERY MILL SUPERINTENDENT

with 20 years of executive experience as foreman, assistant superintendent, and superintendent, would like to take a mill (seamless or full-fashioned) that is losing money and put it on its feet. Good references. Available immediately. Will consider temporary job as trouble shooter. Salary open. Reply to Box 34, TEXTILE INDUSTRIES, 806 Peachtree St., N.E., Atlanta 8, Ga.

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Mr. Kallaher
Nat'l Vulcanized

Mr. Crawley
Victor Ring

Mr. Stevens
Steel Heddle

Mr. Ott
Fife Mfg.

James R. Kallaher has been appointed to the newly-created post of general sales manager of **National Vulcanized Fibre Co.** Succeeding him in his former post of Chicago district manager is Donald W. Stewart. Ralph E. Bryant advances to the post of Boston district sales manager, vacated by Mr. Stewart's promotion. George K. LeVan has been appointed as sales representative in the New England area.

The Nylon Division of **Industrial Rayon Corp.** has earned an award of merit from the Associated Business Publications for "an outstanding advertising campaign to insure the continued growth of nylon consumption by the carpet industry." Industrial Rayon was one of three companies to receive the award in its division in the annual nationwide judging of campaigns of all industries.

R. W. Ott, Jr., has been named vice-president - sales of the **Fife Manufacturing Co., Inc.** With headquarters in Milwaukee, Wis., Mr. Ott will provide sales and technical service to accounts in the midwestern states.

Edward Lindberg, Jr., has been named assistant sales manager of the **Diehl Manufacturing Co.,** the electrical division of the Singer Manufacturing Co. He will work out of the company's main office in Somerville, N. J.

Worth G. Kirkman has joined **Dow Chemical Co.** as a member of the textile research staff at Williamsburg, Va. Mr. Kirkman's position is research engineer.

Trumeter Co. has been appointed sole agent in the United States for Drytester G. m. b. h. in Lungern, Switzerland, manufacturers of equipment for moisture control in textiles.

Victor Ring Traveler Division of Saco-Lowell Shops has appointed Milton D. Crawley to its southern sales staff with headquarters in Atlanta, Ga. Formerly superintendent of Gate City Yarns, Inc., East Point, Ga., Mr. Crawley will serve textile mills in the territory including parts of Georgia, Alabama, and Tennessee.

Steel Heddle Manufacturing Co. has promoted Richard B. Stevens to the position of district manager of their Greensboro, N. C., sales office.

Gerrit J. Popma has been elected president of **Textile Banking Co., Inc.,** succeeding Timothy R. Stearns, who has requested retirement. Mr. Stearns will continue as a director.

Textile Machine Works has reorganized the service and sales departments of its Knitting Machine Division. Under the new plan, William A. Dufft has been promoted from service manager to assistant sales manager with headquarters in Reading, Pa.

Eriez S. A. of Erie, Pa., and W. R. Grace & Co. of New York City have established a plant in Sao Paulo, Brazil, for the manufacture of magnetic materials and to serve as equipment supplier for Brazil and other South American nations.

Malcolm D. Shaffner has announced his impending resignation as president of **Saco-Lowell Shops.** He will continue as chairman of the board. Thomas J. Ault, presently serving as president of Long Manufacturing Div., Borg-Warner Corp., and Long Manufacturing Co., Ltd., will become president of Saco-Lowell.

Joseph J. McLoughlin has been promoted to the newly created position of market research manager of **Taylor Fibre Co.,** with headquarters in Norristown, Pa.

Tom E. Chantron has been named director of advertising for **Texize Chemicals, Inc.,** Greenville, S. C. He was previously an advertising agency account executive.

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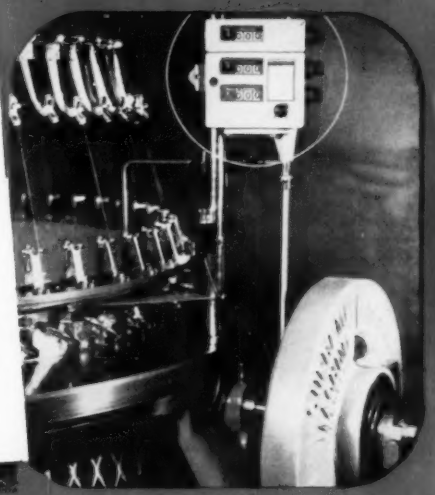
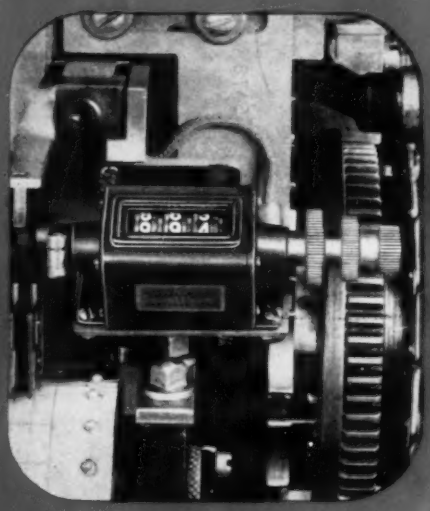
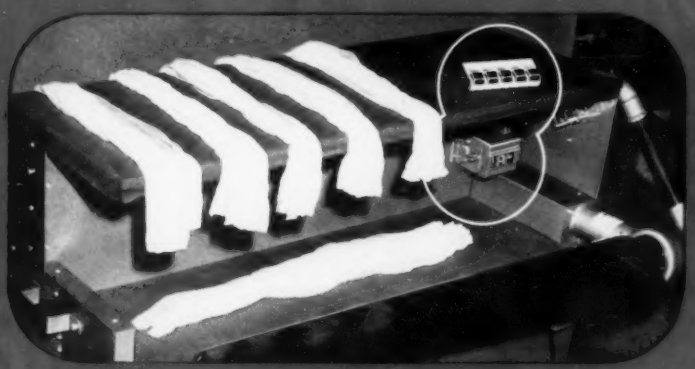


3-shift Revolution Counter on Supreme Knitting Machine.



Small Subtractive Predetermining Counter on Philadelphia Jacquard Knitting Machine.



Vary Tally and Large-Figure Hosiery Dozens Counter on Specialty Mfg. Company's "Inspectomatic" Table.

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